PREVIEW ISSUE

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Scholastic's Magazine for Today's Elementary Classrooms

TEACHING and computers

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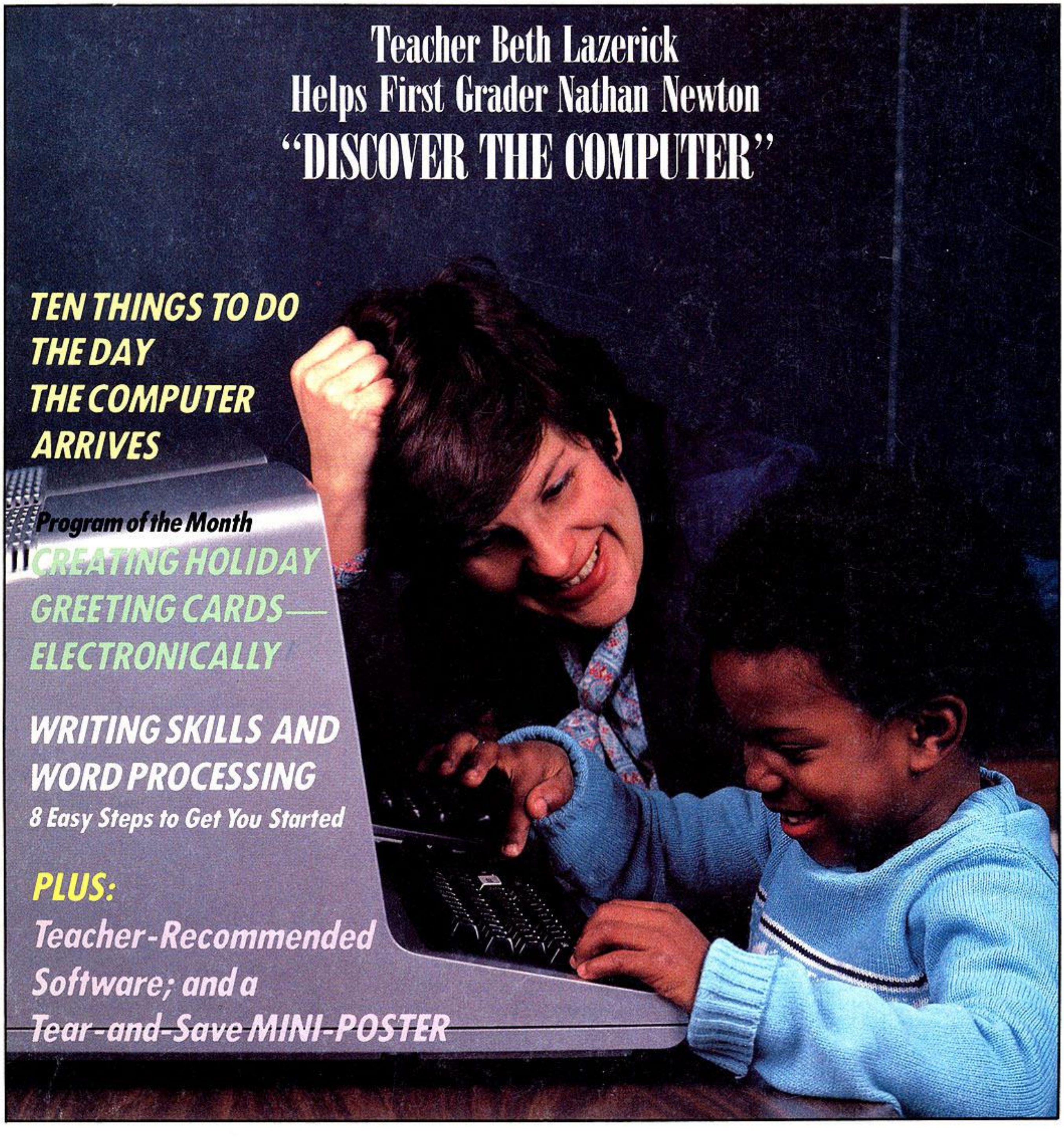
Spring 1983



Teacher Beth Lazerick
Helps First Grader Nathan Newton
"DISCOVER THE COMPUTER"

TEN THINGS TO DO
THE DAY
THE COMPUTER
ARRIVES

Program of the Month
CREATING HOLIDAY
GREETING CARDS—
ELECTRONICALLY

WRITING SKILLS AND
WORD PROCESSING
8 Easy Steps to Get You Started

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Teacher-Recommended
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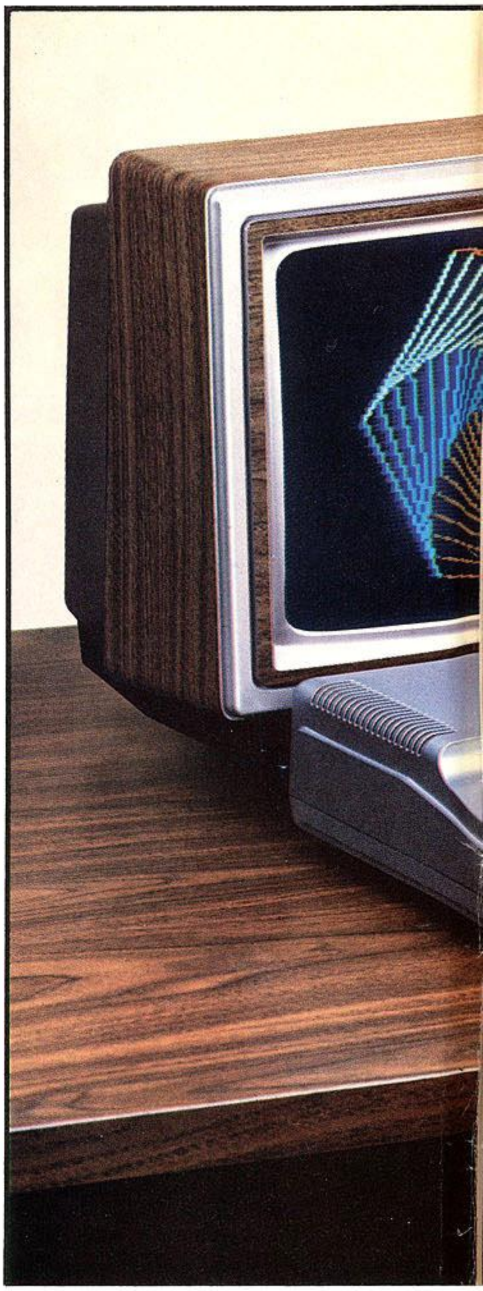
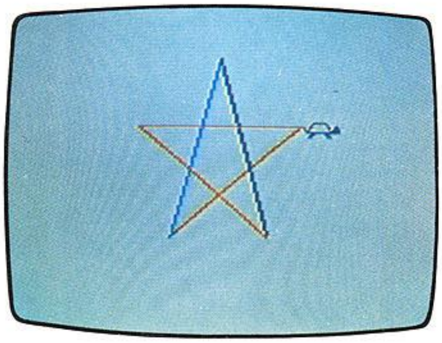


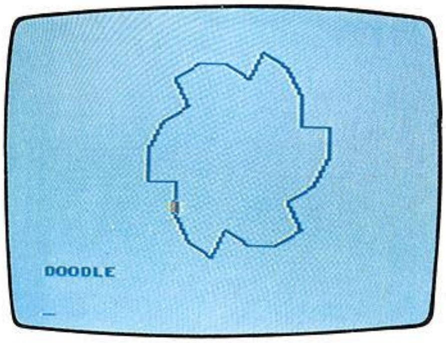
Our remarkable new Color LOGO programming language and a TRS-80® Color Computer will enable children to make a myriad of discoveries. Color LOGO will pique curiosity and excite young minds. Students will welcome each new challenge. And to welcome the challenge is the secret to learning.

A language for learning. The Color LOGO language is designed to help students grasp graphic relationships and develop problem-solving skills. It's easy to learn and fun to use.



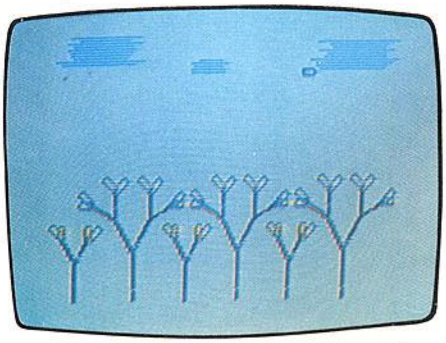
Through manipulation of a "turtle" on the screen, students learn to program. The benefits? The computer becomes a friendly learning tool, and students gain valuable insight into advanced mathematical, geometric and logical concepts through hands-on experimentation.

Even pre-schoolers can benefit. Children who haven't yet begun to read can use a "doodle" mode to create their own graphics using predefined one-key commands. As the pattern is drawn, a program is simultaneously created which allows the "doodle" to be recalled at any time.

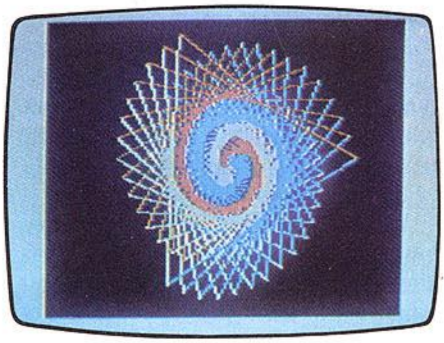


Simple animation is a snap. The Color LOGO turtle can be changed into a variety of different shapes. Thus, students can imaginatively create their own animation simply by redefining the turtle's shape as it moves. They also can produce an unlimited number of designs—from simple to complex—by changing the turtle's movement and direction.

Powerful extensions. Color LOGO features a "hatch" command which allows you to create multiple turtles that are capable of running separate programs simultaneously. You can execute virtually any number of turtle graphics programs all on the same screen—a fascinating programming concept for students of all ages. This "multiple turtles" feature even makes it simple to create dynamic action games.



Low cost makes it ideal for classroom use. Similar programming languages are expensive to implement because they require very large amounts of memory. But not Radio Shack Color LOGO. Our disk version is just $99. It can be used on our 32K Extended BASIC TRS-80 Color Computer Disk System—one of the lowest-priced color disk systems available. And we have a Program Pak™ (ROM) version that's soon to be available for our exceptionally low-priced 16K TRS-80 Color Computer. You can use your own color TV with either system. Color LOGO includes an excellent instruction manual with lessons and programs for the beginner and advanced user.



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TO TEACHING AND COMPUTERS

Dear Scholastic Teacher:

The story of how *Teaching and Computers* came into existence is one I love to tell. It's a story about the power of an idea.

Scholastic is a company with many former teachers on staff, and with a lot of teachers walking in and out our doors. We like to talk to teachers and we like to listen to them. We are always eager to hear about a teacher's idea for something we should publish, and we always talk to teachers about ideas of our own.

It was during such talk that *T&C* emerged—as an idea. Actually, it was an improvement of one of those ideas that started with us.

Several groups of teachers met with us during the past year and a half to talk about the rapidly growing use of computers in education. We thought they'd love to have a classroom magazine to help their students learn about computers.But that was not their most pressing need. "Of course we need materials about computers for the kids," they told us, "but the thing we need first is a magazine for ourselves."

A new kind of magazine for teachers to use. A teacher's magazine that tells all about the computer, that then helps the teacher to teach about the computer, and finally that provides ideas for how to use the computer as a tool for teaching. Step-by-step, the idea grew. Quick tips, reproducible student activity pages, first-person accounts of how other teachers are using computers, recommendations for software programs that really work. We brought in a group of teachers and computer pros and got to work. We developed a prototype to test. Then, we tried it out with other teachers, and they helped us to make it even better—more practical, more immediately useable.

The copy of *T&C* which you are holding is a result of that work. It's a magazine that we believe you can rely on, whether you're a computer novice just beginning to think about computers, or an experienced computer-user, looking for fresh ideas for teaching with or teaching about the computer in your classroom.

We hope you will take a few minutes to look through this special Preview Issue of *T&C,* and then let us know what you think. (There's a short, postage-paid Questionnaire on page 47 of this issue for you to use.)

We look forward to hearing from you, and assure you that your ideas and suggestions will be taken to heart, when we begin regular publication of *Teaching and Computers* this fall.

Sincerely,

Claudia Cohl

Claudia Cohl
Editor in Chief
Scholastic Magazine Group

TEACHING and computers

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MEET OUR ADVISERS

A lot of educators from California to New York devoted their time, energy, ideas, and enthusiasm to the development of this Preview Issue of *Teaching and Computers*. And to all of them, we owe a great deal of thanks.

But seven of those educators—five of whom are pictured on this page, and all of whom now make up *T&C's* Editorial Advisory Board—deserve special recognition for their contributions to this new magazine. It's a pleasure for us to introduce them to you.

PRISTEN BIRD, Instructional Computing Consultant, Florida Department of Education, Tallahassee, FL

Pristen's first interest—teaching gifted students—is what led to her second interest—computers. After teaching both gifted and behavior handicapped students for two years, Pristen began work in 1976 on the Gifted Child Project, sponsored by the Florida DOE. In this position—and in her current position — she has helped teachers and administrators understand and use computers and acted as a computer education consultant. In addition, she has authored several publications including "Computeronics: A Course in Computer Literacy," which she co-authored.

DR. BARBARA BOWEN, Director, Apple Education Foundation, Palo Alto, CA

After a ten-year teaching career in which she taught students ranging from pre-schoolers to doctoral candidates, Barbara channeled her science background into a National Science Foundation project to study the use of technology in improving education. During the project, she discovered LOGO, which she describes as "the most exciting thing I've run across in a long, long time." Since then, Barbara's numerous LOGO projects have led to her observation that "computers should be used not as a device to provide information faster, but as a tool to enhance thinking."

BOBBY GOODSON, Computer Resource Teacher, Cupertino Union School District, Cupertino, CA

Since her first experience with microcomputers five years ago, Bobby has become a nationally recognized spokeswoman for educational computing. In 1982, she received a Distinguished Achievement Award in *Electronic Learning*'s Educator of the Year Awards Program. Although she enjoys her position as president of Computer Using Educators (CUE), perhaps the largest K-12 teacher-user group in the country, Bobby says that she "would rather teach than most anything else," a career she has enjoyed for 15 years.

WALTER KOETKE, Computer Services Director, Board of Cooperative Educational Services (BOCES), Yorktown Heights, NY

Walter taught mathematics at Lexington High School in Lexington, MA from about 1962 to 1972. When the school acquired its first computer terminals in 1964, it was only natural that he would teach the first elective computer courses. As a teacher, Walter realized that "computers help kids deal with the realities they'll face in the future." Walter's long-term involvement with educational computing, coupled with a Bachelor's in mathematics from MIT and a Master's in education from Harvard, led to his current position.

BOB MULLER, Computer Education Specialist, Ridgewood School District, Ridgewood, NJ

Bob first laid eyes on a computer during his undergrad days as a math student. It was then, he recalls, he "saw the computer's potential in education and decided it could make a difference in the classroom." Since then, Bob has taught mathematics and computers, and served as project director to design software for the learning disabled and to measure the effectiveness of drill and practice with slow learners.

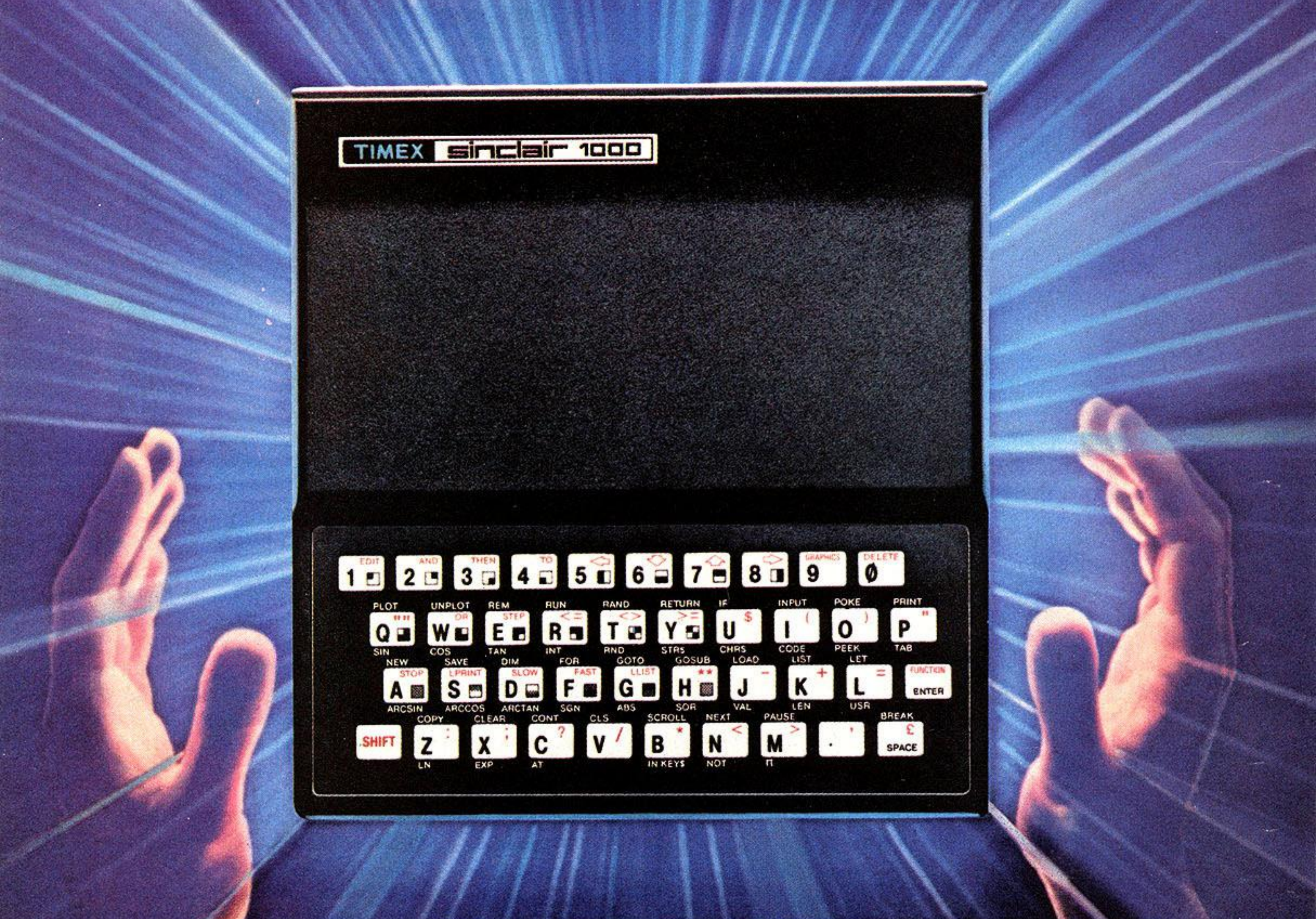
DR. LINDA G. ROBERTS, Associate, U.S. Department of Education, Washington, D.C.

Linda has been involved in education for the past 19 years, as a classroom teacher, reading coordinator, university professor, and educational consultant. During the past three years, she has worked at the DOE on a variety of technology-related projects, focusing primarily on computers in schools. While she believes that computers can be powerful tools for assisting with instruction and for enhancing learning, she is most excited about the "creative applications yet to be developed."

JEAN TENNIS, 5th Grade Teacher, Radcliffe Elementary, Nutley, NJ

Electronic Learning readers might remember Jean from her column "The Computing Diary—Journal of a First Year Computer User." A true computer novice in 1981, Jean is now a not-so-green computer enthusiast with a few words of wisdom for other teachers: "Everyone can use the computer—there's no need to be uptight or feel like it will replace you. Just relax and enjoy!"

THE POWER IS WITHIN YOUR REACH.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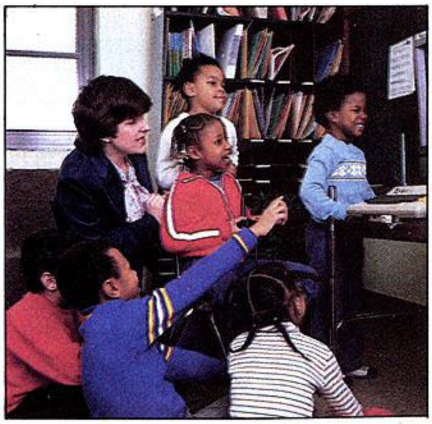
FEATURES



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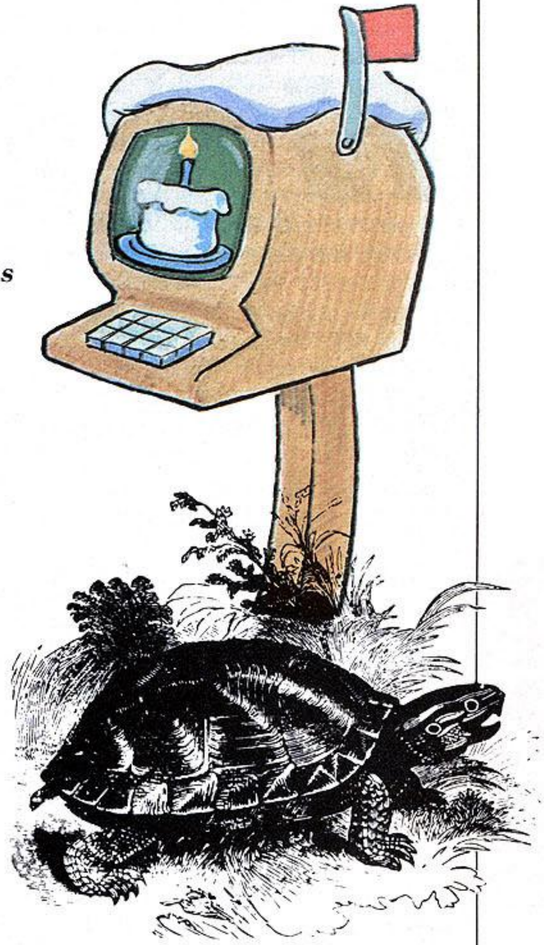

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TEACHING WHERE THE CHILDREN ARE

By Robert W. Jackson

Don't let the computer remain locked behind the math department door forever. The computer is a language tool, and math is only one of those languages.

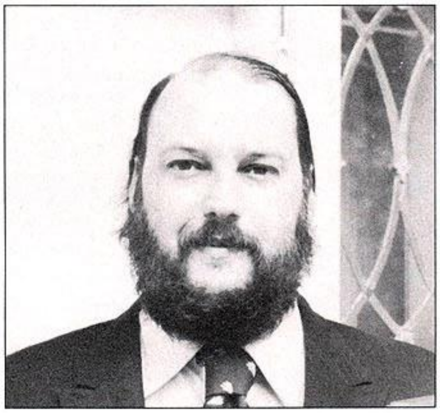
Name the first curriculum area you think of when you think about computers.

If you're like most people, you probably said "math." And, it's true, the computer is an extremely useful tool for the teaching of math.

But there is a whole range of applications for the computer outside the math department, which touch on nearly every academic subject area—from history to art and music to foreign languages. Here are just a couple of those applications, along with some thoughts on how the computer can be put to work effectively in a variety of subjects.

Word processing, a generic term for an electronic typewriter, is an application that can span the entire school curriculum. In one of the schools I've visited, kindergartners were using word processors to make drawings, which they then print out. This activity acquainted them with the keyboard and editing features of the word processor. At another school, one teacher was using her word processor to teach punctuation. She had written a paragraph with mistakes in it and stored it on disk. Students then took turns correcting the paragraph on the computer and printing out their final version.

Data base managers can store, retrieve, and print out information, a perfect tool for a **history** class. One of my history classes used a data base to enter events from 1820 to 1890, half the class concentrating on Europe and the other half on the United States. They then asked the computer to print out all the events for a single year in order to study the relationship of events on either side of the Atlantic Ocean. Although they could have used a reference book, they would have missed the excitement of analyzing data to discover facts.



Robert Jackson is a Computer Consultant at the Whitby School and Mead School in Greenwich, CT.

Programs devoted to teaching history—beyond the boring drill programs—are now coming onto the market. *Time Quest* ($19.99; Programmer's Guild, Box 66, Peterborough, NH 03458) and *Geography Search* (McGraw Hill, 1221 Avenue of the Americas, New York, NY 10020) are two programs I like.

Foreign language teachers can use many of the same programs as their language arts counterparts. With slight modification, spelling programs can drill students for the meaning of words. Better yet, I have been toying with writing adventure stories in French with the help of French students. We make up an outline and design an adventure story which leads the student to explore some aspect of French culture.

Music departments are just beginning to look at computers. At the top of the line is the *Alphasyntauri Music System* (Alphasyntauri Corp., 3506 Waverly St., Palo Alto, CA 94306), which remembers what you compose and can replay the piece on different instruments. With a $2000 price tag, this is a true music synthesizer. At the other end of the scale are music programs for the Apple and Atari, some of which display a composition and ask the student to play it. (The keyboard layout might be a problem here, though.)

At one school where I teach, the **physical education** teacher has several programs on diet and body weight for students to explore. He also uses a computer to figure out a rotating player schedule for the sports association and assess players on the football team.

An **art** teacher I met uses a Logo program to design simple drawings for her students to imitate. She also likes to use the computer to demonstrate how to draw a curve using straight lines. Playing with "paint" on the computer screen also adds another dimension to art and indicates the future impact of computers on the arts.

Typing is a natural for the computer, and yet many schools are still buying electric typewriters. Why train kids for the past? Although the cost of a computer is four times that of an electric typewriter, computers are much more versatile, offering a wide range of other applications, and can also act as typing tutors by analyzing mistakes and providing individualized drill and practice.

These, though, are but a few of the non-mathematical uses for the computer, and—in my opinion—it doesn't matter which computer you have to work with; what matters is what you to do with it. Maria Montessori said; "Teach where the children are." Today, children are at the computer and so am I.

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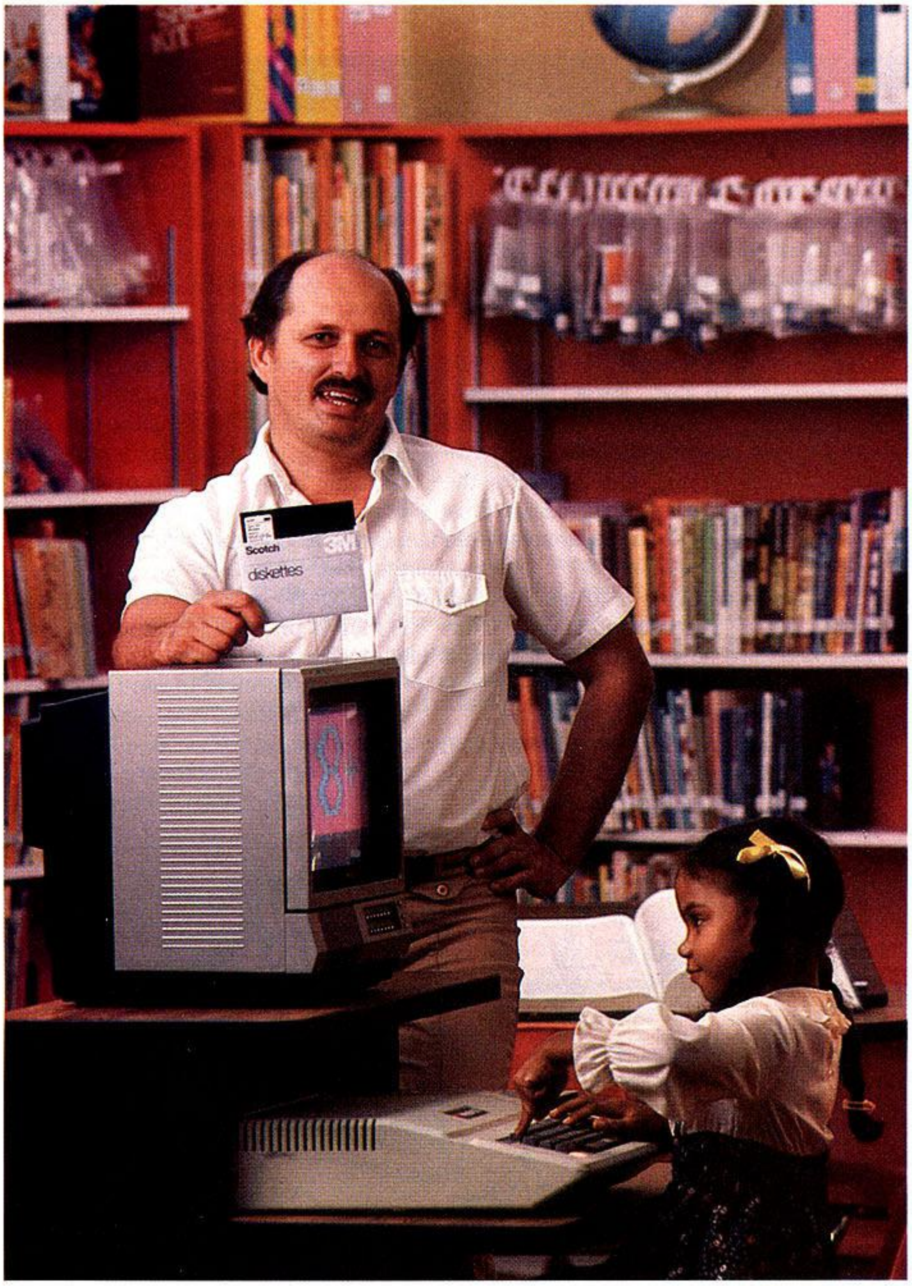

Bill Friis, Director
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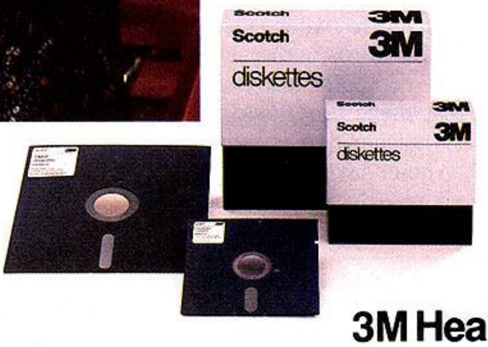

3M Hears You…

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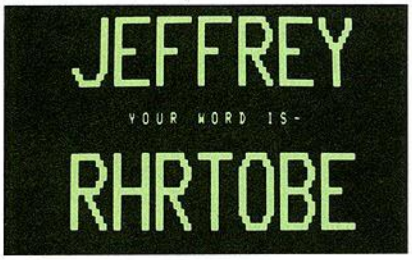
Questions & Answers

Question: *Do you have any suggestions for how I can use my TRS-80 to teach spelling?*

Answer: You might try one of several commercially available spelling programs which allow you to "list" the program and change the data statements. Alice-Ann Winner, consultant for Elementary Education, United Nations International School, New York City, told us she uses *Flash Spelling,* a program which flashes individual words on the screen for a set period of time, and then waits for the student to type in the correct spelling, and *Scrambled Letters,* which scrambles the letters of words for students to unscramble. (*Flash Spelling* and *Scrambled Letters* are also available for the Apple II Plus, Atari 800, and Commodore PET from Educational Activities, Inc., P.O. Box 392, Freeport, NY 11520; both programs: $28.50 cassette; $33.50 disk.) At the beginning of each week, list the programs, locate the necessary data lines, and insert the words to be studied for that week. Then, simply introduce the words in the usual manner, and let the computer take over. "We've found that these programs can effectively replace teacher-directed spelling exercises," Winner says, "and eliminate the need for weekly spelling tests as a method of evaluation."



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JEFFREY
YOUR WORD IS-
RHRTOBE
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Question: *What's the best computer to use with my third graders?*

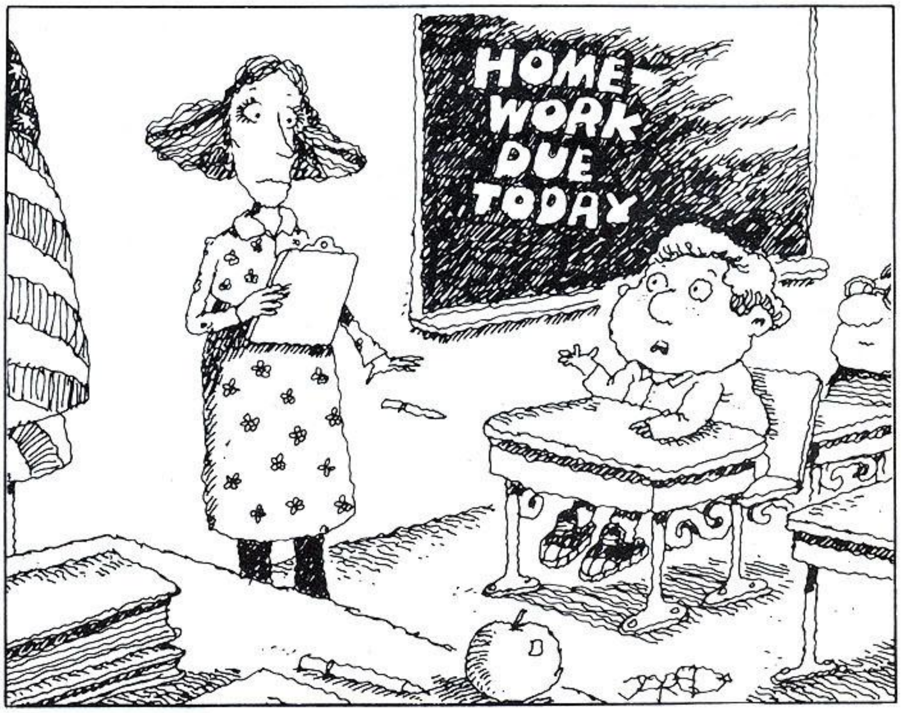
Answer: "What computer should I buy?" is probably the question we hear most frequently, and unfortunately there's no simple answer. Most computer-using educators agree, however, that the first place to start is to decide exactly what you want to use the computer for.

To help you answer *that* question, we turned to *T&C* adviser Walter Koetke. "You can begin by dividing the many possible educational applications into two categories," he said. "First, the microcomputer can be used to teach programming. This means students will write their own programs, enter them at the keyboard, then save them on some form of external storage—usually a cassette tape or floppy disk.

"A second category is to use the computer as an instructional tool, running software developed by others. (Of course, you may wish to use your microcomputer for both applications.)

"If you decide that your primary goal is to teach programming, then you will probably want to teach either BASIC (Beginner's All-Purpose Symbolic Instructional Code), or perhaps LOGO. If you choose to teach BASIC— and are confident that this is the only application of the microcomputer you will want to focus on—then you can meet this need very well with some of the less expensive hardware, such as the TRS-80 Color Computer, the Atari 400, or the Commodore VIC-20. On the other hand, if you are confident that your students will only be learning to program using LOGO, then you have fewer choices. LOGO is currently available only on the TI-99/4A, the Apple II Plus, and the TRS-80 Color Computer, although LOGO is promised for the Commodore 64 in the near future.

"If your intent is to use the computer as an instructional tool—using commercially prepared software—then your first step is to identify software that will best meet your teaching objectives. Visit sev-



"My disk drive ate it."

Jared Lee

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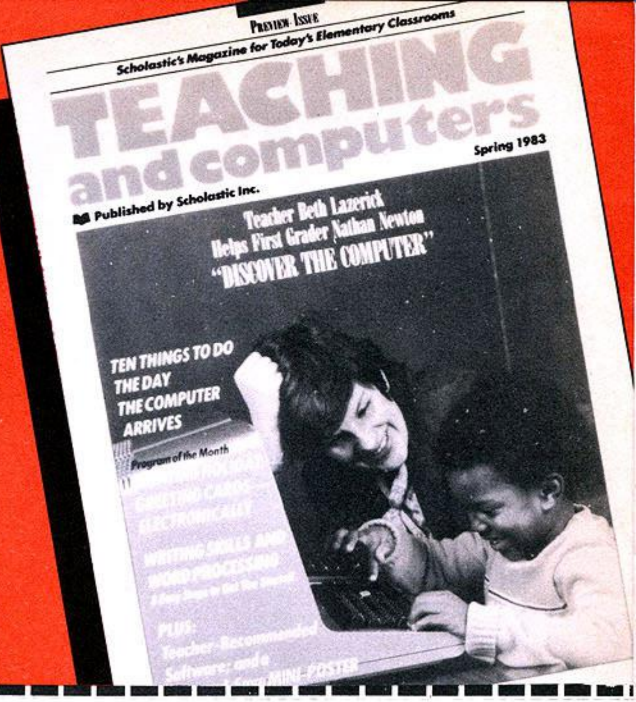
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Grade(s) I teach

School

School Address

City/State/Zip

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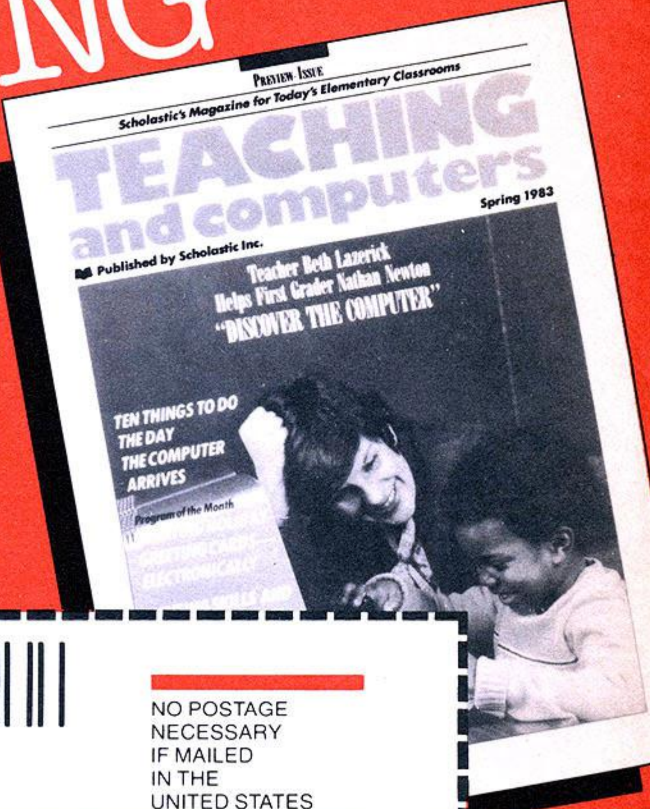

PREVIEW ISSUE

Scholastic's Magazine for Today's Elementary Classrooms

TEACHING and computers

Spring 1983

Published by Scholastic Inc.

Teacher Beth Lazerick Helps First Grader Nathan Newton "DISCOVER THE COMPUTER"

TEN THINGS TO DO THE DAY THE COMPUTER ARRIVES

Program of the Month

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My Name ____________

Grade(s) I teach ____________

School ____________

School Address ____________

City/State/Zip ____________

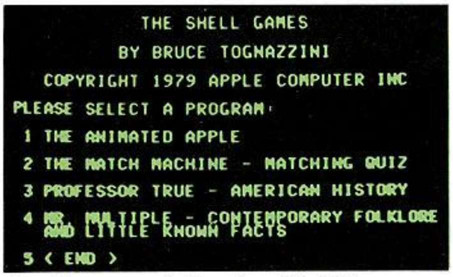
Signature/Title ____________

9323

eral computer stores; check the exhibit areas at professional meetings; visit other schools—do whatever you can to actually see the software in use. As you see software you like, make a note of what computer it's being run on. (All instructional software released to date is machine specific. That means software written for one computer will do absolutely nothing on another brand of computer.) Eventually, the software you like should lead you to the computer you need."

Question: I'd like to create some original computer lessons for my fourth graders, but haven't had time to learn BASIC. Is there any way I can get around this?

Answer: How about trying one of the many authoring systems on the market. Put simply, an authoring system (or authoring language) is a computer program that helps you write computer programs, using everyday English. For example, a typical authoring program will step you through a series of questions, asking you for the question you want to ask, the correct answers, the feedback for both correct and incorrect responses, the number of tries for each question, and hints you may want to provide after the first wrong answer. After you type in all the information, the program automatically creates the lesson for you.



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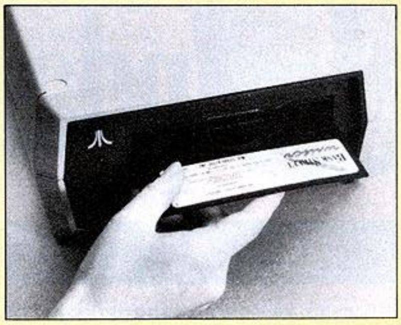
          THE SHELL GAMES
        BY BRUCE TOGNAZZINI
   COPYRIGHT 1979 APPLE COMPUTER INC
PLEASE SELECT A PROGRAM:
 1 THE ANIMATED APPLE
 2 THE MATCH MACHINE - MATCHING QUIZ
 3 PROFESSOR TRUE - AMERICAN HISTORY
 4 MR. MULTIPLE - CONTEMPORARY FOLKLORE
   AND LITTLE KNOWN FACTS
 5 < END >
```

Sample screen display from Shell Games.

One simplified authoring program which Adviser Bobby Goodson recommends for the Apple is *Shell Games* (Apple Computer, Inc., 10260 Bandley Dr., Cupertino, CA; 408/996-1010; Integer, 32K disk; $29.95). It comes with an easy-to-follow manual, and makes it possible for a non-programmer to create true/false, matching, and multiple choice tests. A similar program —this one for the TRS-80—is called *Quick Quiz: A Mini-Authoring System* (Radio Shack Outlets or Computer Centers; TRS-80 Models I and III; 32k disk; $29.95). It provides a structure for multiple choice questions with four choices for each question.

For the Beginner



A COMPUTER CAN'T DO ANYTHING unless it's given a set of instructions called a *program*. You can buy commercially prepared programs (known as *software*) or write your own programs. Either way, you need a device that will get the program into the computer's memory.

Generally speaking, there are three ways to INPUT a program into the computer's memory: the keyboard, an audiocassette tape recorder, and a disk drive. Here's a brief explanation of how they work.

The Keyboard: This looks like—and basically works like—a standard typewriter. As you type the program on the computer's keyboard, each letter, number, or symbol is stored inside the computer's memory.

The Cassette Tape Recorder: Many commercially available programs are stored on cassette tape. To transfer the program from the tape to the computer's memory, you need a standard audiocassette tape recorder, connected to the computer. Then, you simply put the tape into the recorder, and type a simple command. This is called loading the program.

The Disk Drive: This is a special device that will also load a program from a floppy disk—a small, record-like, paper-encased plastic disk—into the computer. In essence, the disk drive "plays" a floppy disk much like a record player plays a record.

In addition to serving as a means for inputting a program into the computer, both the tape recorder and disk drive serve as external storage devices. In other words, if you type a program on the keyboard, you can save (or transfer) that program from the computer's memory to a blank cassette tape or floppy disk.

When you buy a microcomputer, you will generally (though not always) have the option of buying it with a cassette tape recorder or a disk drive as the primary means for inputting commercially prepared programs. While the cassette tape recorder is considerably cheaper (running from $30 to $100), most educators we've talked with believe that the extra expense of a disk drive (from $500 to $1000) is well worth the money. In the next issue of *T&C* we'll take a closer look at the advantages and disadvantages of both systems.

NOW IT'S YOUR TURN. HOW WOULD YOU ANSWER THIS QUESTION?

Question: I HAVE 27 STUDENTS in my fourth grade classroom and have found out that I'll be getting a computer this coming spring. I'd like to teach a unit on computer literacy, but don't know where to start. Can you recommend some good materials to use with my fourth graders? Also, what advice do you have for how to manage the logistics of trying to teach 27 students with only one computer?

Send your ideas and suggestions to: Your Turn, *Teaching and Computers*, 730 Broadway, New York, NY 10003. We'll pay $25 for each answer to this question that is printed in a future issue of *T&C*.

Update

NEWS AND INFORMATION OF INTEREST TO ELEMENTARY TEACHERS

INDUSTRY NEWS

COMMODORE PLACES 600 PROGRAMS IN PUBLIC DOMAIN

To ensure a ready-made software library for the new Commodore 64 microcomputer, Commodore Business Machines, Inc . has placed 600 educational programs, covering 13 subject areas for all grade levels in the public domain. Written by Canadian educators, the programs are available at little or no cost from any one of the more than 800 Commodore dealerships in the U.S. and abroad. (The entire set of programs can also be purchased for $250.) The programs—all on diskettes—are compatible with the PET, CBM, and Commodore 64 microcomputers.

COMPUTER CURRICULUM CORP. OFFERS SOFTWARE FOR SONY

Two courseware packages–"Reading for Comprehension" and "Math Skills, Grades 1–6"—are now available for the Sony SMC-70 microcomputer. In addition, CCC expects to release 20 more of its courseware packages for the SMC-70 by the end of 1983. CCC is the company that produces the CCC-17, a hardware/software package that offers individualized instruction in 27 complete curriculums.

RADIO SHACK ANNOUNCES 4th QUARTER GRANTS PROGRAM

The fourth quarter topic for the Tandy/TRS-80 Educational Grants Program is "Unique and Innovative Microcomputer Applications in Education." Individuals and non-profit organizations are invited to submit written proposals to Tandy/TRS-80 Educational Grants Program, Radio Shack Educational Division, 400 Tandy Atrium, Fort Worth, TX 76102, by March 31, 1983. Winners chosen by the Educational Grants Review Board will receive TRS-80 equipment totalling up to $500,000 per year.

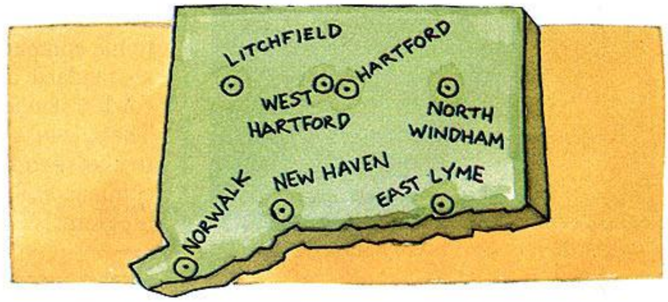
VERBATIM SPONSORS SOFTWARE CONTEST

The Verbatim Corporation is sponsoring the "First International Computer EdGame Challenge;" a software competition that offers both the chance to win prizes and possible royalties on future sales of the winning programs. Judging of the entries is being coordinated by two non-profit educational computing organizations, CONDUIT and MicroSIFT, which will be looking for "informative, imaginative, entertaining, and non-violent" software. Deadline: March 31, 1983. For complete details, call 800/221-4052.

STATE HAPPENINGS

CONNECTICUT GETS COMPUTER DISCOUNTS

The six-state-funded Regional Service Centers in Connecticut have arranged for educational discounts on microcomputer hardware from four computer manufacturers. The discounts, ranging from 10 to 25 percent, are available to 90 percent of the state's 169 school districts which belong to one of the Regional Centers.



IOWA AEDS PUBLISHES COMPUTER RESOURCE

The third edition of the Educational Computing Talent Resource Book, published by Iowa Association for Educational Data Systems (AEDS), is now available. It lists resource people whom schools can call on for workshops, speeches, and other presentations. It's available only to Iowa AEDS members, but the Iowa AEDS will provide information to other state-user groups interested in publishing a similar reference book for their state. Contact Lorraine Patrick, Area Two, Educational Computer Center, 500 College Dr., Mason City, Iowa 50401; (515) 423-4004.

NEW YORK AEDS PRODUCES "COMPUTER AWARENESS" TAPE

The New York State Association for Educational Data Systems (AEDS) has developed a 30-minute videotape on the uses of computers in the classroom. The program is available to anyone who sends two blank videocassettes (specify VHS or Beta format) to Don Ross, New York State AEDS, ℅ Ardsley High School, 500 Farm Road, Ardsley, NY 10502. Ask for the "K-12 Computer Awareness Kit."

CALIFORNIA RECEIVES FUNDS FOR TEACHER TRAINING

Former California Governor Edmund G. Brown has set aside $26 million for a program called Investment in People, designed to augment technology training in schools. Nearly $10 million of the funds will be used for training K-12 teachers in Teacher Education and Computer (TEC) Centers, complete with a Software Library and Clearinghouse. In addition to helping teachers evaluate software, the Software Library and Clearinghouse has recently selected over 300 highly-recommended software programs and categorized them by subject and grade. Information on the Investment in People program is available by writing the California DOE in Sacramento, CA.

COLORADO USER GROUP FORMED

Educators in the Pikes Peak region in Colorado joined together this past November to form the Rocky Mountain Educational Computing Consortium (RM-ECCO). Wayne Schoefter, one of the group's organizers, says that, although the group is not affiliated with any state agency and does not receive outside funds, the "grass roots activities" of the group have filled a state need for a cooperative user group. For more information about RM-ECCO and how they were formed, contact Shoefter at 2380 Naegle Rd., Colorado Springs, CO 80904; (303) 632-3391 (computer access number).

ILLINOIS EDUCATORS ASSEMBLE USER GROUP

The newly-formed Central Illinois Computer Consortium, developed by educators, is a non-profit organization partially funded by the Illinois Office of Education. Richard Murdach, Director of the group, requests that anyone who is seeking more information or who has information about the use of computers in art contact him at the Central Illinois Computer Consortium, Renewel Center, 1444 Maine St., Quincy, IL 62301; (217) 786-6737 (computer access).

NEW JERSEY C.L.U.E.S. HOLDS CONTEST

The New Jersey chapter of the Computer Learners, Users, Educators Association (CLUES) is sponsoring the Third Annual International Computer Problem Solving Contest, a nation-wide event coordinated by the University of Wisconsin—Parkside and directed by local user groups. The New Jersey contest is slated for April 30 in Clark, NJ. Teams of elementary, intermediate, and high school students will compete in three categories to solve five problems in two hours using only a computer. For information on the New Jersey contest, contact Henry Peterson, 50 Nellis Dr., Wayne, NJ 07470; (201) 696-3157. Information on setting up your own contest is available by writing Dr. D. T. Piele, University of Wisconsin—Parkside, Box 2000, Kenosha, WI 53141.

RESEARCH REPORTS

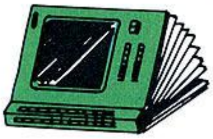
KCET REPORTS "GREAT POTENTIAL" FOR TELETEX

KCET has issued a report stating that teletex, which allows digital information such as letters, number and graphics to be displayed on a television screen, "holds great potential as an educational medium." The report is based on a Los Angeles Teletex Project in which children in the Los Angeles School District used teletex. The report indicates that teletex even "increased the childrens' reading of traditional print materials." KCET projects that teletex will be available to the public by fall, 1983.

NCES SURVEY STUDIES USES OF COMPUTERS

The National Center for Educational Statistics (NCES) has found in a 1982 survey that elementary schools use computers for computer literacy and basic learning skills with equal frequency —about 29 percent of the time. The study also revealed that computers in elementary schools are being used about 21 percent of the time for learning enrichment, 18 percent for compensatory or remedial purposes and seven percent for computer science.

ETS STUDY SHOWS IMPROVED TEST SCORES WITH CAI



A four-year study conducted by the Educational Testing Service in collaboration with the Los Angeles Unified School District, has found that students who had access to Computer-Assisted Instruction (CAI) for only 10 minutes a day scored "significantly higher" on achievement tests in mathematics than students who did not have CAI. (Twenty minutes a day doubled the gain.) In addition, the ETS study found smaller but "consistently positive" gains in reading and language arts. (The study was conducted across the entire spectrum of K-6 curricula, using materials leased from the Computer Curriculum Corporation.) For more information about the study, write to the Educational Testing Service, Princeton, NJ.

Convention Calendar

MARCH

4-6: ARTHUR FINK: HARVARD, MA

"Computers and Personal Values: Sharing from Experience" (also May 20–22). Speakers, discussions and workshops on the general theme of the impact of computers in society. Contact: Arthur Fink, Box 614 Prince St., Wilton, NH 03086; (603) 654-6518.

10-12: COUNCIL FOR EXCEPTIONAL CHILDREN: HARTFORD, CT

"National Topical Conference on the Use of Microcomputers in Special Education." Focus on software, hardware and the use of computers in aiding handicapped. Contact: John Gressi, The Council for Exceptional Children, Dept. of Field Services, 1920 Association Drive, Reston, VA 22091-1589.

14-15: MICHIGAN ASSOCIATION FOR COMPUTER USERS IN LEARNING: DEARBORN, MI

Annual conference: Presentations on computer literacy, classroom applications and more. Contact: Betty VandenBosch Shaw, Flint Community Schools, 923 E. Kearsley St., Flint, MI 48502: (313) 762-1007.

17-19: ARIZONA STATE UNIVERSITY'S ANNUAL CONFERENCE: TEMPE, AZ

"Spring 1983 Microcomputers in Education Conference": Emphasis on the computer revolution with workshops, demonstrations, and presentations. Contact: Marilyn Sue Ford, B-47 Payne Hall, Arizona State University, Tempe, AZ 85287; (602) 965-7363.

18: MARYLAND ASSOCIATION FOR THE EDUCATIONAL USE OF THE COMPUTER: JESSUP, MD

1983 Spring Symposium. Presentations on administrative and classroom uses of computers, computer science and more. Contact: Robert Wall, Education Dept., Hawkins Hall, Towson State University, Baltimore, MD 21204.

18-19: TEXAS COMPUTER EDUCATION ASSOCIATION: AUSTIN, TX

Annual Conference: Theme is "Computers Expanding Horizons"; includes vendor displays and laboratory sessions. Contact: Sandy Pratscher, 11512 Oak Knoll, Austin, TX 78759.

25: NORTH CAROLINA AEDS: BURLINGTON, NC

Seventh Annual Conference. Sessions on the uses of technology for communication and other topics; sales presentation of the IBM Personal Computer. Contact Margaret Bingham, ℅ Department of Education, 116 W. Edenton St., Raleigh, NC 27611; (919) 733-4695.

28-30: FLORIDA INSTRUCTIONAL COMPUTING CONFERENCE: TAMPA, FL

Third Annual Conference. Purpose: To advance the application of computer technology in all levels of education (K-University) and to address the use of computers in the fields of instruction, supervision and management. Contact: Educational Technology Section, Knott Bldg., Tallahassee, FL 32301; (904) 488-0980

APRIL

7-9: ALASKA DEPARTMENT OF EDUCATION AND THE ALASKA ASSOCIATION FOR COMPUTERS IN EDUCATION: ANCHORAGE, AK

1983 Annual Conference. Over 20 sessions in all subjects, vendor displays, workshops, software previews, programming contest, door prizes and more. Contact: Sue Henry, Department of Education, Pouch F, Juneau, AK 99811; (907) 465-4685.

13-16: NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS: DETROIT, MI

61st Annual Meeting. Theme is "The Challenge of Change." Contact: The National Council of Teachers of Mathematics, 1906 Association Dr., Reston, VA 22091; (703) 620-9840.

28-30: THE NEW ENGLAND ASSOCIATION OF TEACHER EDUCATORS: KENNEBUNKPORT, ME

The New England Regional Microcomputers Conference. Discussion on the future of computers in education, educational uses of computers, software/hardware evaluations and more. Vendor displays, exhibitors and hands-on sessions are also included. Contact: Harold A. Jacobson, Education Department, Colby College, Waterville, ME 04901; (207) 873-1131 ext. 2195.

28-30: JUDCO COMPUTER EXPOS: WASHINGTON, D.C.

ED∗COM Spring '83 Conference. Over 300 sessions, demonstrations, seminars, panels, and courses designed to "address, evaluate, and analyze the phenomenal developments of computers in education." Contact: Carol Houts, Judco Computer Expos, 2629 N. Scottsdale Rd., Suite 201, Scottsdale, AZ 85257; (800) 528-2355 or (602) 990-1715.

28-30: NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS: CHICAGO, IL

NCTM '83 Seminar Series. Purpose is to "inform educators how to effectively use the microcomputer as a unique tool in mathematics education." (Also on May 5-7 in New York, NY) Contact: NCTM '83 Seminar Series, 1906 Association Dr., Reston, VA 22091; (703) 620-9840.

29-30: COMPUTER USING EDUCATORS: SAN DIEGO, CA

Third Annual CUE Conference. Reception, dinner, workshops with the theme "Something for Everyone" (beginners, intermediates and experts). Contact: Jan Davis or Barbara Chumbley, 6456 Shirehall Dr., San Diego, CA 92111; 619/477-1129 or 474-9769.

MAY

2-6: INTERNATIONAL READING ASSOCIATION: ANAHEIM, CA

28th Annual Conference. Presentation of the Broadcast Media Awards and Print Media Awards. Contact: Drew Cassidy, IRA, 800 Barksdale Rd., PO Box 8139, Newark, DE 19711; (302) 731-1600.

7: COMPUTER LEARNERS, USERS, EDUCATORS ASSOC.: CLARK, NJ

Annual meeting. Featured speaker will be Prof. Mitchell B. Batoff. Contact: Henry Peterson, 50 Nellis Dr., Wayne, NJ 07470; (201) 696-3157.

9-13: ASSOCIATION FOR EDUCATIONAL DATA SYSTEMS: PORTLAND, OR

21st Annual Convention. Presentations on the general theme "Frontiers in Educational Computing." Contact: Nancy Stiggins, AEDS 1983 Convention, PO Box 3107, Portland, OR 97208; (503) 249-2000 ext. 506.

18-25: ASSOCIATION OF MATHEMATICS TEACHERS OF NEW JERSEY: LAWRENCEVILLE AND CALDWELL, NJ

Sixth Annual Conference on Elementary Mathematics. Workshops and Presentations on the general theme "Mathematics—Meeting the Challenges of Technology." Topics include problem solving, computer literacy, gifted and talented and more. Contact: Carolyn M. Canfield, AMTNJ, West Milford Township Schools, Arnold Rd., West Milford, NJ 07480.

JUNE

1-4: TEXAS TECH UNIVERSITY: LUBBOCK, TX

First Annual Sunbelt Educational Computing Conference. Presentations and papers on the theme "Practical Applications and Current Issues in Educational Computing." Accepting applications for presentations until May 1, 1983. Contact: Cleborne D. Maddux, Texas Tech University, College of Education, Box 4560, Lubbock, TX 79409-4560.

6-8: NATIONAL EDUCATIONAL COMPUTING CONFERENCE: BALTIMORE, MD

Fifth Annual National Educational Computing Conference. Sessions, exhibits, workshops and more on the status of computers in education. Contact: Doris K. Lidket, Department of Mathematics and Computer Science, Towson State University, Baltimore, MD 21204.

Editor's Note: To have your state, regional, or national meeting listed in this calendar, send your information to Convention Calendar, *Teaching and Computers,* 730 Broadway, New York, NY 10003. Be sure to include the name and phone number of someone our staff can contact.

SWIFT LEARNINGWARE™

"HOW TO PROGRAM IN BASIC" TUTORIALS

No programming background needed. Diskettes/cassette tapes and "hands on" Microcomputer Workbooks. For the Apple II, TRS-80, PET Commodore, and TI-99/4A—to load the microcomputer for CAI (Computer-Assisted Instruction). Priced as sets (Workbook and diskettes *or* cassettes)—$74.95.

DISCOVER BASIC: Problem Solving with the Apple II Computer

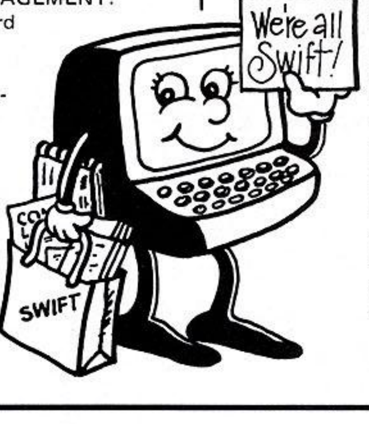
A comprehensive introduction for students and teachers in programming and problem-solving instruction using the APPLESOFT™ version of the BASIC computer language. *Student Workbook*—$5.95 each. *Teacher's Guide and Materials* (includes Workbook with key, Demonstrations Disk with 34 programs, and Solutions Disk)—$74.95

COMPUTER PROGRAMMING FOR KIDS AND OTHER BEGINNERS

Written for elementary students, parents, and other beginners—$9.95.

APPLE-BASED ELEMENTARY MATHEMATICS CLASSROOM LEARNING SYSTEM

Designed to support basic mathematics skills in ● Intermediate Grades ● Junior High School Grades ● and for remediation DOCUMENTATION: Getting Started; Lesson Objectives/Designs; Testing Strategies. INSTRUCTION: Tutorial Approaches; Drill-and-Practice; Corrective Feedback; Games. LEARNING MANAGEMENT: Achievement record keeping (up to 200 students). **Set 1—Whole Numbers. Set 2—Fractions/Decimals.** Each set, English or Spanish—$495.00; subsequent sets to same account—$295.00. (Also available for the Corvus Hard Disk.)



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Made to be the most competent, authentic learning program available for **classroom** or **home** use. Self-contained, integrated, learning packages. Programs for each of the following, plus *games*: ● Addition ● Subtraction ● Multiplication ● Division ● Fractions—Basic Concepts ● Fractions—Addition and Subtraction ● Fractions—Multiplication and Division ● Decimals. Contains all the features of the *Elementary Mathematics Classroom Learning System,* except the management disk. *Each program—$49.95 Plus games—$29.95 *Note: Four of these were chosen for Apple® Computer, Inc.'s *Apple Blossom* promotion.

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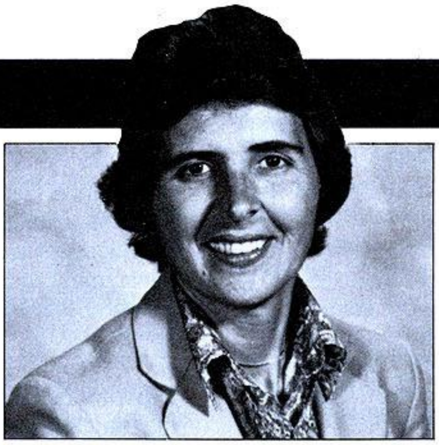
From the Principal's Desk

A COMPUTER LITERACY PROGRAM FOR ALL STUDENTS

By Sandra Will

Here's a three-year computer implementation plan that will expose all intermediate students to meaningful computer operations and potentials.



Sandra Will is Principal of Seven Trees Elementary School, a 578-pupil school in San Jose, California.

Some educators rightly maintain that computer education is necessary to create additional computer scientists. However, many educators, myself among them, believe more people are needed who are aware of the potential and capacity of information technology. Their creative use of that potential technology is needed in business, recreation, the arts, and science.

It's for that reason that last spring, our school advisory committee, composed of parents and teachers, began formulating a plan that would successfully build a curriculum of computer literacy appropriate for all of our intermediate students.

We began by establishing a committee which set down goals, objectives, constraints and recommendations that would be examined and approved by the S.A.C., before the actual hardware and software was purchased. The committee decided to plan a three-year approach to computer instruction. During the first year, all students in grades 4, 5, and 6 would be exposed to the same curriculum—basically, a brief knowledge of the history of the computer, its operation, as well as simple programming. During the second year of the phase-in process, the fourth grade would use the same basic first-year curriculum and the 5th and 6th grade would be exposed to more advanced programming and usage. Finally, during the third year, the 4th and 5th grades would use the basic 1st and 2nd year curriculum and the 6th grades would be exposed to problem-solving, word processing, and more sophisticated uses of the computer. Thus, by 1984, all students would be exposed to all phases of the computer curriculum.

Since our school day is already more than filled with mandated subjects, we decided that the computer class had to be held during non-school hours. Therefore, we have one class of ten students from 8:05 A.M. to 8:45 A.M. before school, and another class of ten students from 2:45 P.M. to 3:25 P.M. after school. The classes are three weeks in duration, and we expect to give direct computer instruction to 260 students per year. In addition, the computer room is open during the lunch hour for games and enrichment for students with computer passes from their teachers. And this coming summer, we hope to encourage the school board to open a two week, half-day computer camp here at Seven Trees Elementary School, where students and parents could participate.

Perhaps computers are merely tools with which we can enrich our lives through greater efficiency; however, as educators we must be alert to the needs of society and provide literacy in all relevant areas.

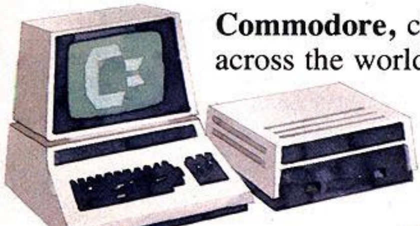
COMPUTER LITERACY IMPLEMENTATION PLAN

	1982	1983–84	1984–85
4th Grade	• History • Operation • Simple Programming	• History • Operation • Simple Programming	• History • Operation • Simple Programming
5th Grade	• History • Operation • Simple Programming	• Advanced Programming • Graphics • Write & Develop Educational Games	• Advanced Programming • Graphics • Write & Develop Educational Games
6th Grade	• History • Operation • Simple Programming	• Advanced Programming • Graphics • Write & Develop Educational Games	• Word Processing • Problem Solving • Application

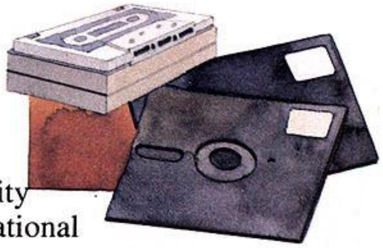
You don't need a computer. You need a system.

Considering educational microcomputers? Consider this. You don't need a computer. You need a system! A system tailored to meet your objectives. A system that works. A system you can afford. You need a Fisher system.

Reliable Commodore Hardware



Commodore, chosen by more schools across the world than any other microcomputer. Built to withstand classroom abuse.



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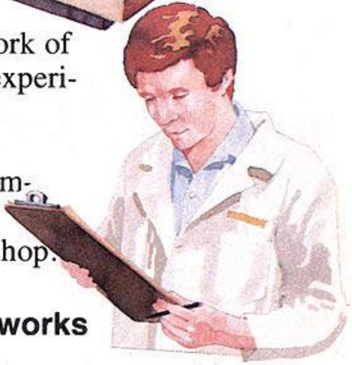

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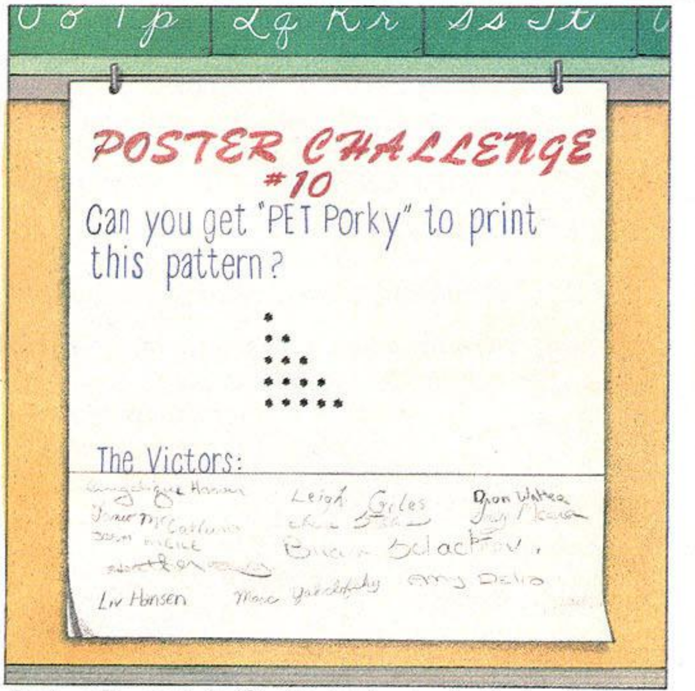
Micro Ideas

A GRAB BAG OF READY-TO-USE TEACHING TIPS

CREATE WEEKLY PROGRAMMING CHALLENGES

Idea by: ***Craig Nansen*** *and* ***Ken Boyeff,*** *Minot High School, Minot, ND*

LOOKING FOR A WAY to improve your students' basic programming skills? Try posting weekly Programming Challenges on the wall in the back of the room. Each poster should challenge the students to write a program that will cause the output depicted on the poster (e.g., a certain pattern, a series of numbers, etc.) At the bottom of each poster, include a blank box labelled "The Victors." Allow students to "autograph" that box only after they have successfully written a program to solve the week's Poster Programming Challenge.



POSTER CHALLENGE #10

Can you get "PET Porky" to print this pattern?

```
*
* *
* * *
* * * *
* * * * *
```

The Victors:

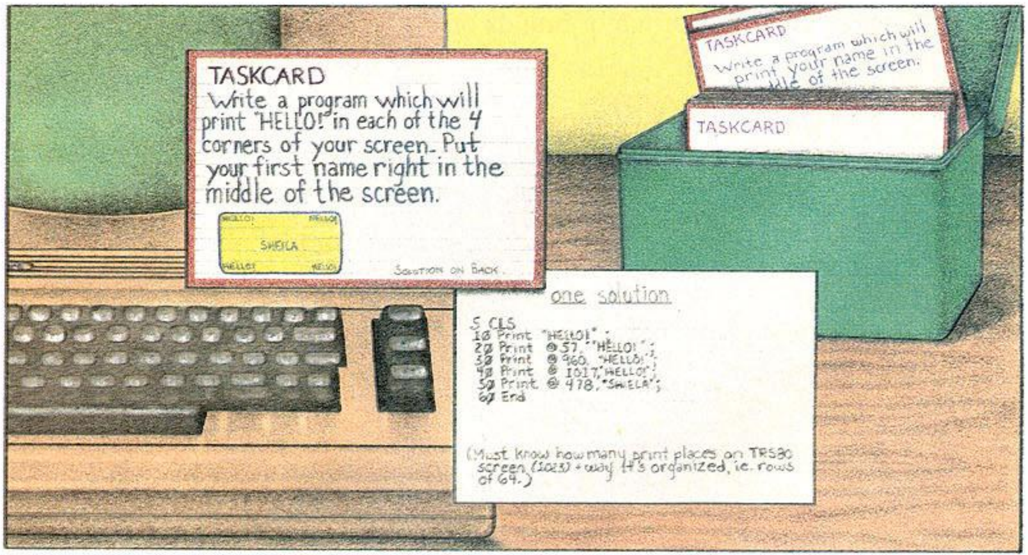
Post weekly computer Challenges for your beginning programming students.

> ### *Quick Tips*
>
> - **Open faulty diskettes** carefully to show students how they are made and why they must be handled with care.
> - **Set a kitchen timer near the computer** to let students know when their time is up at the computer.

MAKE PROGRAMMING TASK CARDS ON 5 × 8 FILE CARDS

Idea by: ***Sheila Swett,*** *Elementary Math Teacher, Purdy Station, NY*

MAKE UP A SET of a programming Task Cards that can be stored in a file box in your computer corner. On one side of the card, print the programming task, along with a sample of the OUTPUT expected (*see example*). On the other side of the card, print the solution. (You might also want to color-code the cards with colored borders to indicate levels of difficulty: red, for example, for beginning level programming activities; blue for intermediate; and yellow for advanced.) You can easily add to your Task Cards throughout the year, and will always have a handy set of programming activities for your students to use.



TASKCARD

Write a program which will print "HELLO!" in each of the 4 corners of your screen. Put your first name right in the middle of the screen.

HELLO!
HELLO!
SHEILA
HELLO!
HELLO!

SOLUTION ON BACK.

TASKCARD

Write a program which will print your name in the middle of the screen.

TASKCARD

one solution

```
5 CLS
10 Print "HELLO!";
20 Print @57, "HELLO!";
30 Print @960, "HELLO!";
40 Print @ 1017,"HELLO!";
50 Print @ 478,"SHEILA";
60 End
```

(Must know how many print places on TRS80 screen (1023) + way it's organized, ie. rows of 64.)

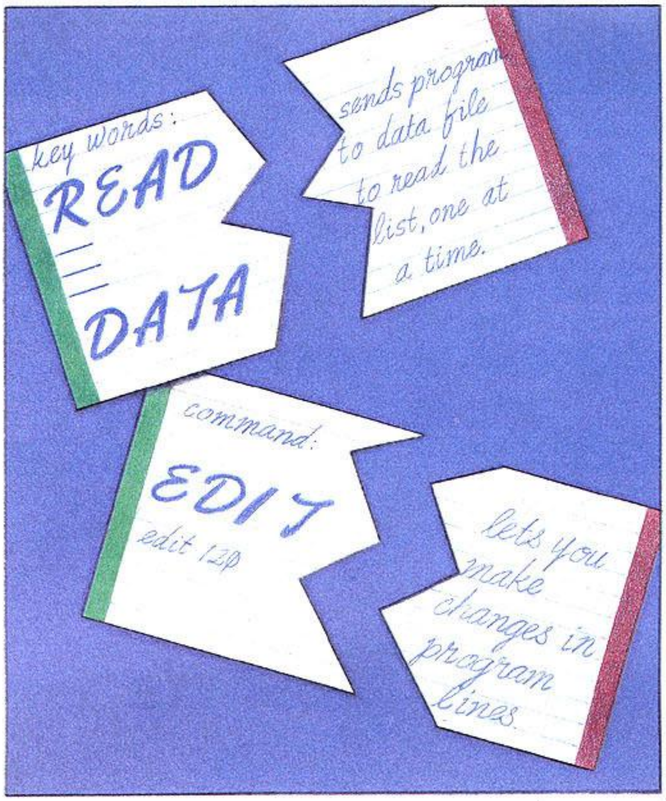
A set of Programming Task Cards, such as this one for the TRS-80, provides students with ready-to-use programming activities.

REVAMP GAMES TO TEACH COMPUTER VOCABULARY

Idea by: ***Sheila Swett,*** *Elementary Math Teacher, Purdy Station, NY*

PUT YOUR FAVORITE classroom games, tricks, and activities to work in a new way to meet computer literacy objectives for both novices and pros alike. Here are three activities I use to introduce computer vocabulary and BASIC commands:

(1) Word Search Puzzles—You can buy commercially prepared software that will create the puzzle for you, using words you have typed into the program.
(2) Computer Dictonary—Writing and illustrating a Dictionary as a class project can also help reinforce such language arts skills as alphabetizing.
(3) Match-Up Game—See sample


key words:
READ
DATA
sends program to data file to read the list, one at a time.
command:
EDIT
edit 120
lets you make changes in program lines.

Using 3×5 index cards, make a set of Match-Up cards. Cut each card slightly differently, scramble them up, get a timer, and you're ready to go.

USE NEEDLEWORK PATTERNS AS GRAPHICS MODELS

Idea by: ***Bobby Goodson,*** *Computer Resource Teacher, Cupertino, CA*

CROSS-STITCH NEEDLEWORK patterns make great design models for students who are programming graphics. Cross-stitch patterns (from simple images to entire scenes) are designs plotted on graphs, and are easy for students to translate into computer graphics. (Needlepoint designs may work, too, but they're more complicated and would probably work best on high-resolution screens.) Keep a scrapbook of the patterns for students to choose from as they need them.

USE POKER CHIPS AS A SCORE-KEEPING DEVICE

Idea by: ***Maureen Dobert,*** *first grade teacher, Idle Hour School, Bohemia, L.I., NY*

A "kitty" full of poker chips will solve the problem of how to keep score when using a drill and practice program that doesn't include a score-keeping sub-routine. (That's a part of a program that keeps track of the total number of correct and incorrect responses to questions or problems.) Each time students answer a question correctly, they can take one poker chip out of the kitty. When the program is over, they simply add their total number of chips, record their score, and put the chips back in the kitty for the next student to use.

Quick Tips

- **Use good old-fashioned flash cards** to help students learn new computer vocabulary.

Got a Quick Tip? Send it to Quick Tips, *Teaching with Computers*, 730 Broadway, New York, NY 10003. For each Quick Tip published, we'll pay $5.)

COLOR-CODE YOUR DISKETTES FOR EASY IDENTIFICATION

Idea by: ***Craig Nansen,*** *Minot High School, Minot, ND*

USE COLOR-CODED, self-adhesive labels to organize your diskettes for instant identification. For example, use blue labels to identify all your math disks; green for social studies; yellow for English or language arts disks. (I reserve red—the most noticeable color—for game disks.)

You'll need 3″ × 5″ self-adhesive labels (Avery or Dennison make them in a variety of colors), and 2″ wide clear Scotch book tape. Cut the labels in half, lengthwise. The resulting 1½″ × 5″ strip covers the whole upper width of your diskette, allowing all that space for bold, eye-catching labels. (Avery also markets special floppy disk labels in white only, but with color-coding potential. A box of 80 5¼″ × 1¾″ labels sells for about $3).

To prevent damage to the disk, do your label-writing before you attach it to the disk, using felt-tip pens. Once completed, protect the label with the book tape for a more professional look, and cut out the "write-protect" notch before affixing to the disk.

Other Color-Coding Ideas: Use multi-colored stick-on dots to subdivide categories of disks, e.g., drill and practice programs, versus games, versus programming problems or your own originally created programs. Schools with more than one kind of machine might use the color-coding system for machine identification, blue-labelled disks for the Apple, yellow-labelled disks for the TRS-80, etc.

Editor's Note: We'd like to hear about your favorite tips for better, more effective teaching *with* or *about* the computer. Send your suggestion to Micro Ideas, *Teaching and Computers*, 730 Broadway, New York, NY 10003. We'll pay $25 for each Micro Idea we publish in the magazine.

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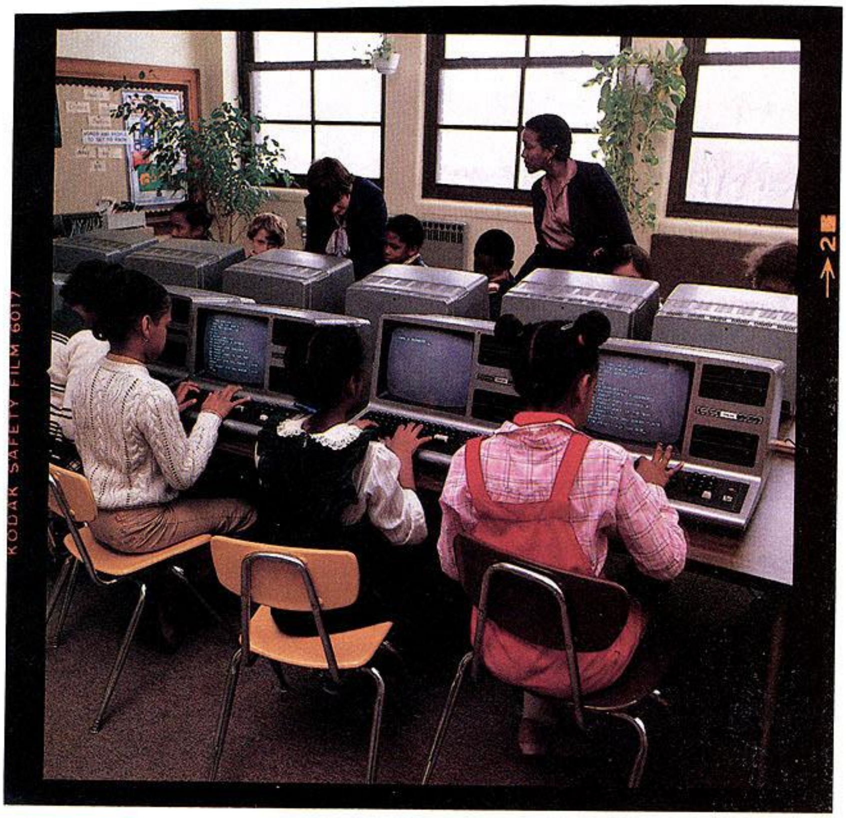
YOU WON
TIME LEFT
0:05
6/9 = 2/3
START
FINISH
apple II
Microcomputer Software
Ratios and Propo

A DAY IN THE LIFE OF A COMPUTER-USING TEACHER

Teaching* with *the computer
and* about *the computer
to first through sixth graders—
Beth Lazerick does it all.

By ANDREW CALKINS

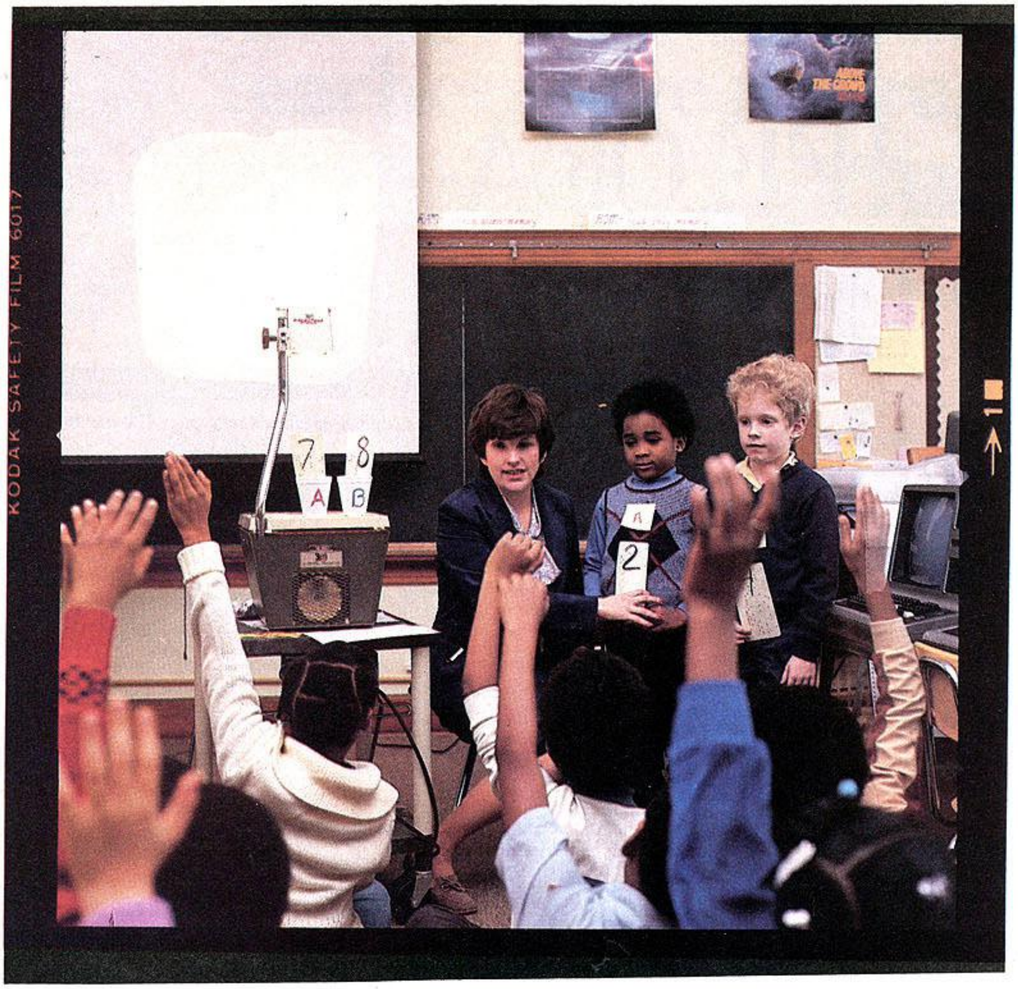


You can see her gripping "Big Trak" under one arm and a transistor board under the other while trudging through Cleveland's winter snow. Or you might see her crouched on the floor, guiding first graders through the intricacies of an endless loop. Then, again, you could catch her slathering peanut butter and jelly on white bread and constructing flowcharts for the fourth grade.

She's Dr. Beth Lazerick, the Computing Coordinator at Moreland Elementary School in Shaker Heights, OH. And all of these activities are just part of a normal day for Dr. Lazerick and the youngsters who visit her Computer Lab each week.

For a look at some of those activities, follow us on our pictorial tour of a day in the Moreland lab. For more of Dr. Lazerick's observations about the computing capabilities of elementary-age children, turn to page 22.

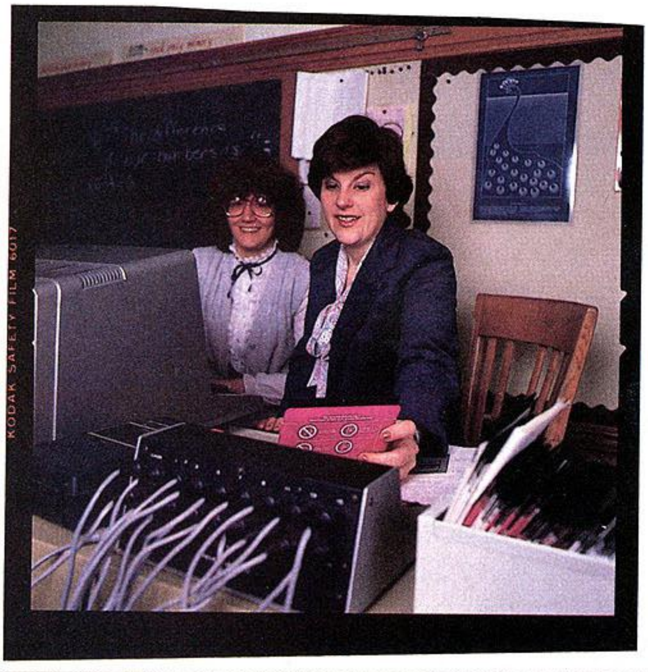
Andrew Calkins is Managing Editor of Scholastic's Electronic Learning *Magazine.*

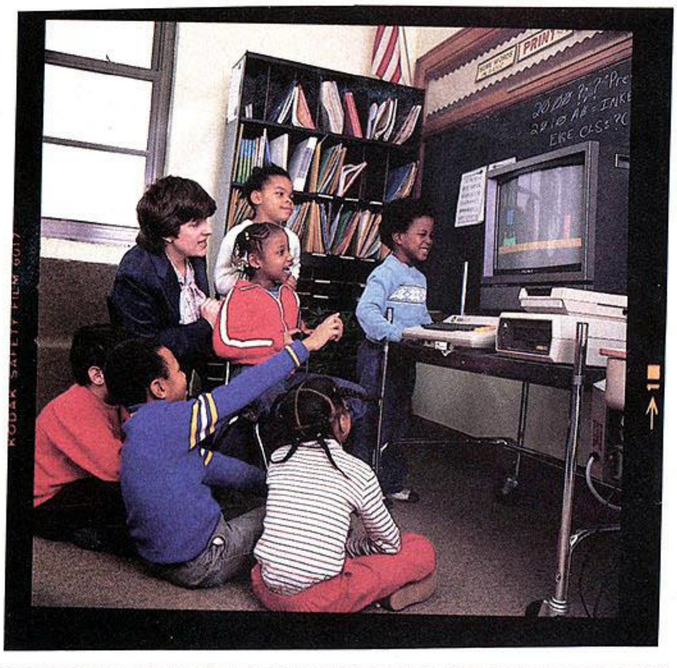


9:10 Class: Second Grade

Topic: Input

"The cups marked A and B represent memory banks. With the students' help, I 'input' numerical values into each 'bank'; then I ask the kids to act as the computer and add or subtract the values of A and B. After a while, I ask a couple of students to be 'memory banks' and I stick the numerical values on their chests. It's amazing how quickly they grasp the idea of numeric variables—and how much fun they have doing it!"



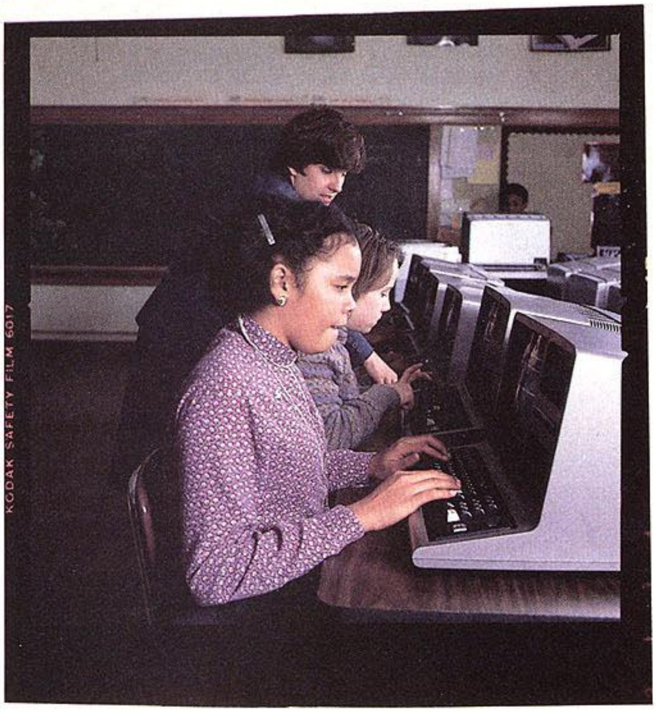


10:00 Free Period: Teacher Assistance

"I'm always trying to arrange my CAI lessons so they'll fit with the other teachers' curricula, and to help those teachers learn to use computers on their own."

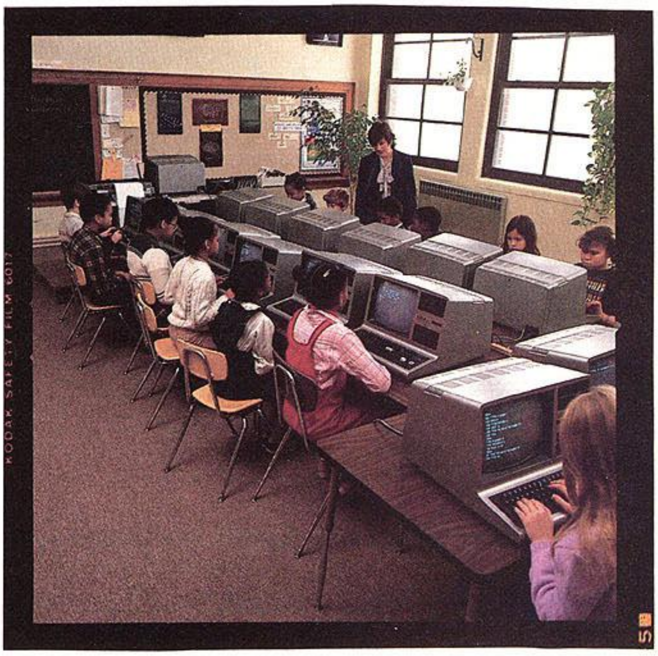
10:35 Class: First Grade Activity: CAI

"The Adventures of Oswald (PDI, Inc., Greenwich, CT) helps teach young children directional skills, motor capabilities—and how to follow instructions. That last one is an especially important lesson!"



11:55

Class: Sixth Grade Activity: CAI
"*Word Mount* (Random House, New York, NY) helps build my sixth graders' vocabulary skills. I usually circulate behind them, helping any student who gets stuck or confused by something in the program."



1:40

Class: Fourth Grade Activity: Programming/ Keyboard Skills
"Often I just put a simple program on the overhead: 10 PRINT / 20 INPUT A$ / 30 GOTO 10. Then I lead the kids through it once, and let 'em go."

KODAK SAFETY FILM 6017
→2
DEFENSE
GRUMMAN

2:20

Class: Sixth Grade

Topic: Computer Awareness
"A different sixth grade class is doing a unit on careers. It's an easy (and instructive) lesson to have the students search through the Want Ads for computer job openings. The lesson will have even more impact if you have them post all the clippings on large wall charts; they can't fail to be impressed by all of the demand for computer literate workers."

A DAY IN THE LIFE
(Continued from page 19)

"My first year as Computer Coordinator at Moreland was a real learning experience for me, too," Dr. Lazerick told T&C when we visited her classroom recently. Her most valuable lesson? "An understanding of the computer skills that kids at different grade levels can handle."

Armed with that knowledge, Dr. Lazerick constructed a curriculum for grades 1–6 that teaches computer literacy through a gradual build-up of programming skills. (Dr. Lazerick also offers computer-assisted instruction—CAI—to all students. The software she uses ranges from programs that teach telling time or addition and subtraction in the first grade to French vocabulary or the metric system in upper grades.)

What follows is a list of the computer objectives which Dr. Lazerick teaches in grades 1-6, along with some of her observations about students' capabilities at each grade level.

Computer Objectives For Students

Grade 1

Computer Objectives: Basic operation (on/off); names for parts of the computer; BASIC commands: PRINT, LIST, RUN, CLOAD, GOTO, INPUT A$; locating letters and symbols on the keyboard.
Comments: "While students may not internalize commands, they can create one- to three-line programs."

Grade 2

Computer Objectives: Ways to input information; differences between TRS-80 and Atari; able to access upper case symbols on keyboard
Comments: "Having mastered most of the basic skills presented to first grades, students are able to type in four- or five-line programs, and identify the meaning of each line."

Grade 3

Computer Objectives: Expand computer vocabulary (ROM, RAM); debugging activities; able to write simple programs with PRINT and GOTO from memory.
Comments: "Third graders feel comfortable with computers, and begin to experiment with their own programs."

Grade 4

Computer Objectives: Basic theory of how a computer operates; computers in society; more complex programming: IF-THEN, FOR-NEXT, POKE.
Comments: "At this level, real programming "stars" emerge. Students are also able to better understand the logic behind programming."

Grade 5

Computer Objectives: More computer awareness, including history; and computer careers; advanced programming: REM, GOSUB, READ/DATA.
Comments: "There is more 'learning transfer' at this level as well as creative thinking behind programming. Students are increasingly interested in simulations and more complex games."

Grade 6

Computer Objectives: Programming embellishments, such as timer loops, input statements, simple graphics.
Comments: "Sixth graders are able to adapt, interpret, and edit line statements. Many spontaneously alter programs to meet their own ideas. They also demonstrate better typing and abstract thinking skills."

Idea of the Month

EARN A COMPUTER OPERATOR'S LICENSE

Looking for a fun way to reward your students for their computer proficiency? Try these ready-to-reproduce Computer Operator's Licenses.

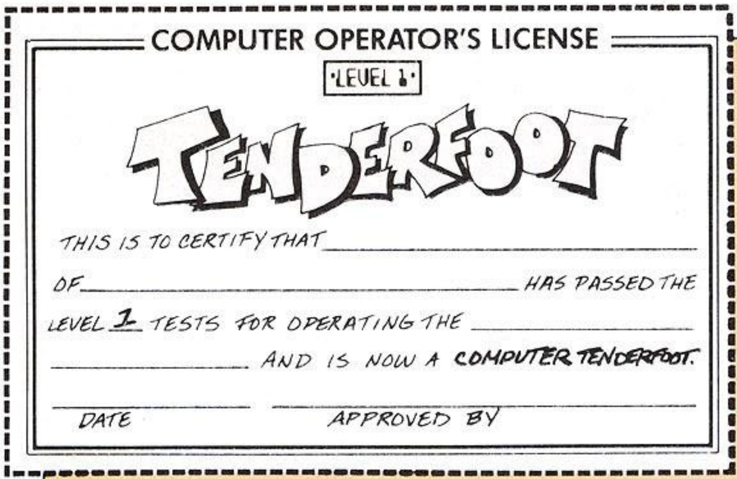
"One of the nice things about computers," says Computer Coordinator Beth Lazerick, "is that each student can advance at his or her own pace. But it also helps to have some concrete system for measuring their progress."

So Dr. Lazerick came up with the idea of issuing five different Computer Operator's Licenses, color-coded to indicate five different levels of computer proficiency. In order to win a Computer Operator's License, each student must pass both a written and an "on-line" test. "We require students to score 85% or better on the written test, and 100% on the on-line test," Lazerick says.

The result has been terrific. "These Operator's licenses have not only become real status symbols at Moreland, but also have motivated students to improve their basic computer skills."

On the next page are the five tests that Lazerick gives. In addition, we've created five ready-to-reproduce Operator's Licenses—similar to the ones students at Moreland receive. Simply cut out and photocopy each license on a different color of paper. Then, as you issue the licenses, students can cut them out and paste them down on sturdier construction paper or cardboard. (You might also suggest that they have their license laminated.)

***Editor's Note:** The following tests were developed by Dr. Lazerick to reflect the computer literacy objectives she teaches at Moreland Elementary School. Since the school uses TRS-80 and Atari microcomputers, the tests are also geared to those machines in terms of vocabulary, commands, and procedures.*



COMPUTER OPERATOR'S LICENSE

·LEVEL 1·

TENDERFOOT

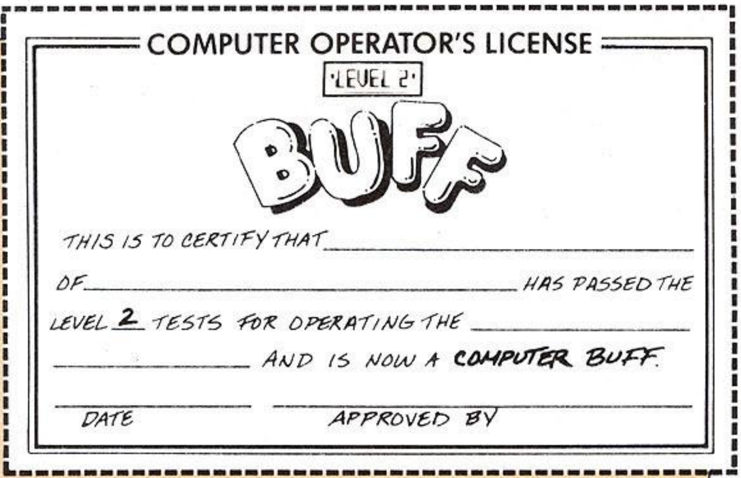
THIS IS TO CERTIFY THAT ____________________

OF ____________________ HAS PASSED THE

LEVEL 1 TESTS FOR OPERATING THE ____________

____________ AND IS NOW A COMPUTER TENDERFOOT.

DATE ____________ APPROVED BY ____________



COMPUTER OPERATOR'S LICENSE

·LEVEL 2·

BUFF

THIS IS TO CERTIFY THAT ____________________

OF ____________________ HAS PASSED THE

LEVEL 2 TESTS FOR OPERATING THE ____________

____________ AND IS NOW A COMPUTER BUFF.

DATE ____________ APPROVED BY ____________

Computer Operator's Tests

LEVEL I: TENDERFOOT (Green Card)

A. Written (Teacher dictates questions)

1. Correctly spell: computer, CLOAD, NEW, LIST.
2. Write two sentences telling about computers.

B. On-Line

1. Locate these keys on the keyboard: , . ? "
2. Make the computer repeat a single letter for two lines, and then erase it by using the backspace key.

LEVEL II: BUFF (Yellow Card)

A. Written

1. Identify and define: ROM, RAM, CPU, monitor.
2. Name 3 ways to input information into a computer.

B. On-Line

1. Write a continuous loop program that prints a word (a) down the screen; (b) in four columns; and (c) continuously across the screen.
2. Break the program with the "break" key.

LEVEL III: WIZ (Pink Card)

A. Written

1. Name four places where computers are used, and describe how they are used.
2. State what a REM statement is.

B. On-Line

1. Count from 1 to 100 forward and backwards using FOR-NEXT.
2. Use CLS in a program.
3. Add, subtract, multiply, and/or divide using direct and indirect modes.
4. Use CHR$ (23) in a program.
5. LIST a program.

LEVEL IV: ACE (Blue Card)

A. Written

1. Explain how a computer works.
2. Describe "artificial intelligence."
3. Describe how computers have changed over the years.

B. On-Line

1. Write a program using INPUT A and INPUT A$.
2. Use IF-THEN to determine correctness of answers.
3. Use a timer loop to relay return to the beginning of any program.
4. Load a tape and save a program.
5. Set up an Atari or TRS-80.

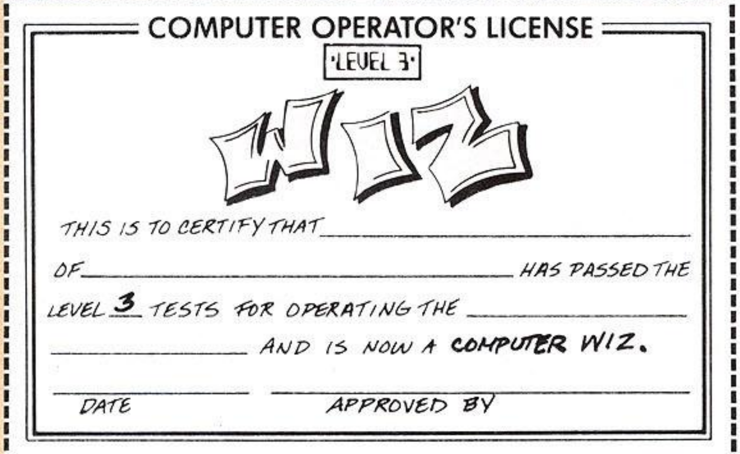
LEVEL V: MASTER (Tan Card)

A. Written:

1. Write a one- to two-page paper on computer history.
2. Write a simple flow chart.
3. Describe three computer-career opportunities.

B. On-Line

1. Demonstrate how to use a disk drive.
2. Write a program using a nested loop.
3. Write a program using a subroutine.
4. Write a program using a PRINT statement.



COMPUTER OPERATOR'S LICENSE

·LEVEL 3·

WIZ

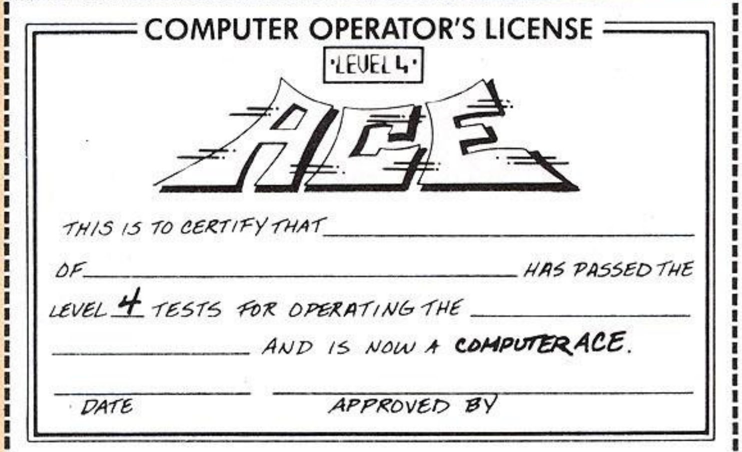
THIS IS TO CERTIFY THAT ____________________

OF ____________________ HAS PASSED THE

LEVEL 3 TESTS FOR OPERATING THE ____________

____________ AND IS NOW A COMPUTER WIZ.

DATE ____________ APPROVED BY ____________



COMPUTER OPERATOR'S LICENSE

·LEVEL 4·

ACE

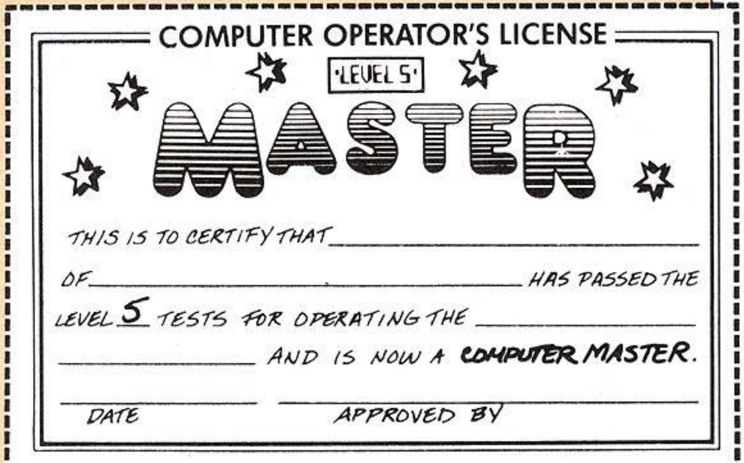
THIS IS TO CERTIFY THAT ____________________

OF ____________________ HAS PASSED THE

LEVEL 4 TESTS FOR OPERATING THE ____________

____________ AND IS NOW A COMPUTER ACE.

DATE ____________ APPROVED BY ____________



COMPUTER OPERATOR'S LICENSE

·LEVEL 5·

MASTER

THIS IS TO CERTIFY THAT ____________________

OF ____________________ HAS PASSED THE

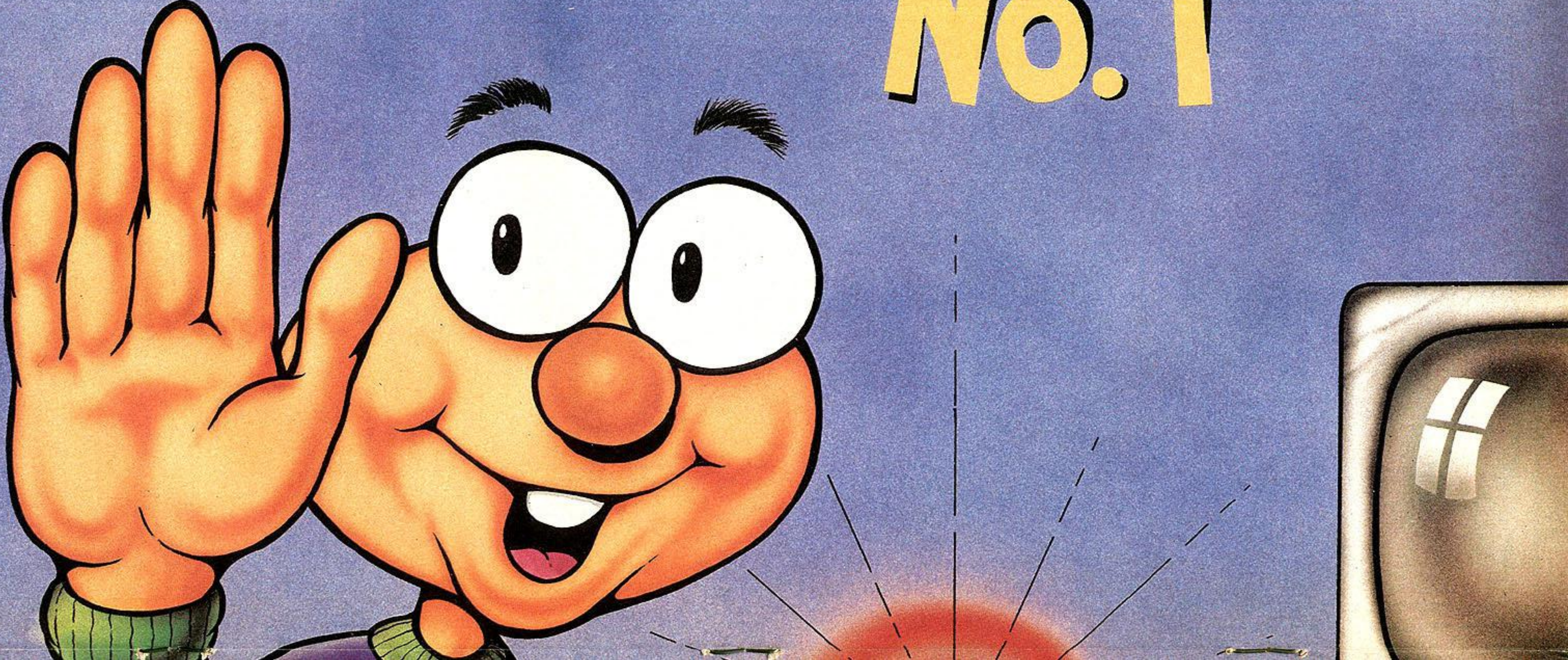
LEVEL 5 TESTS FOR OPERATING THE ____________

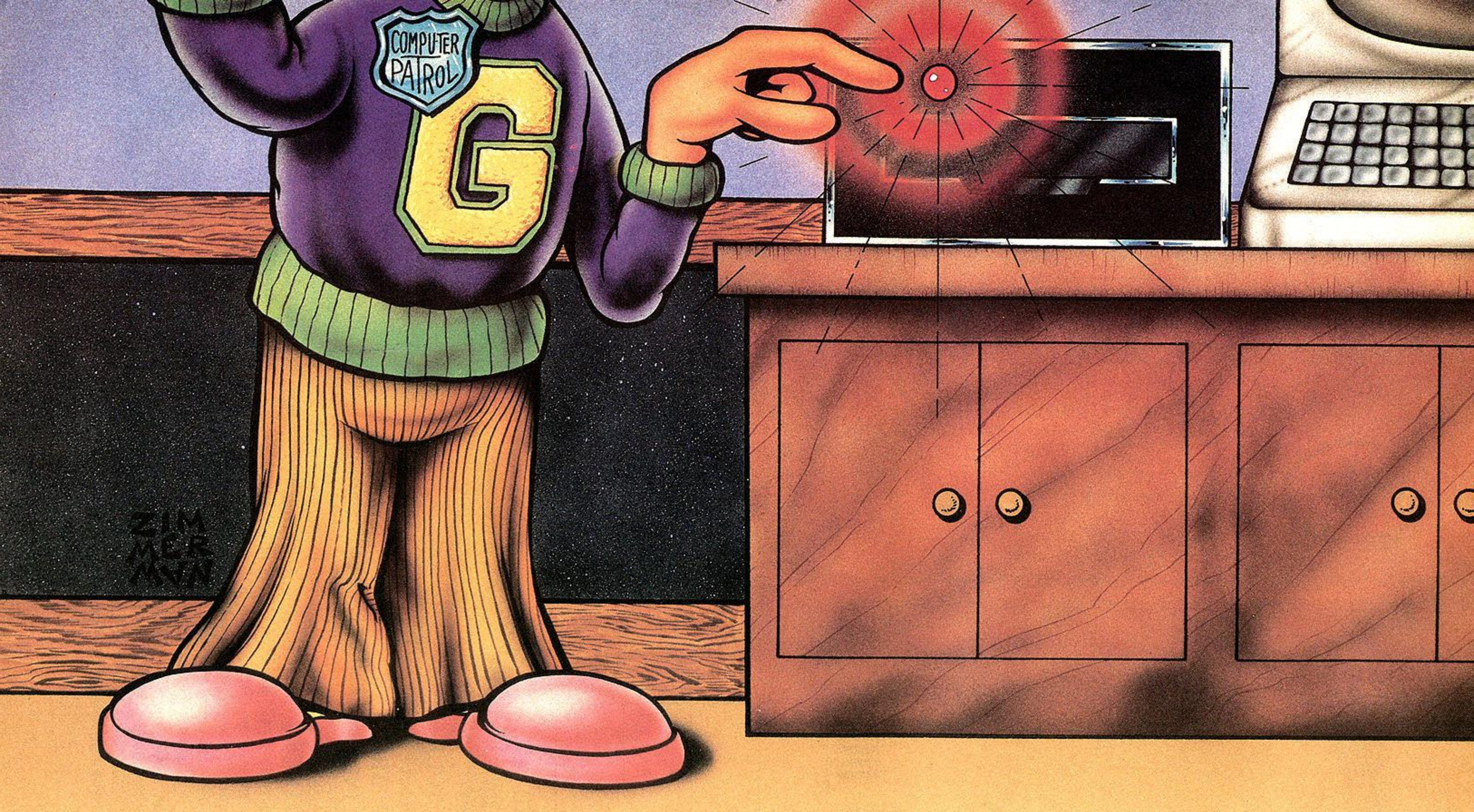
____________ AND IS NOW A COMPUTER MASTER.

DATE ____________ APPROVED BY ____________

GURNEY'S COMPUTER TIPS

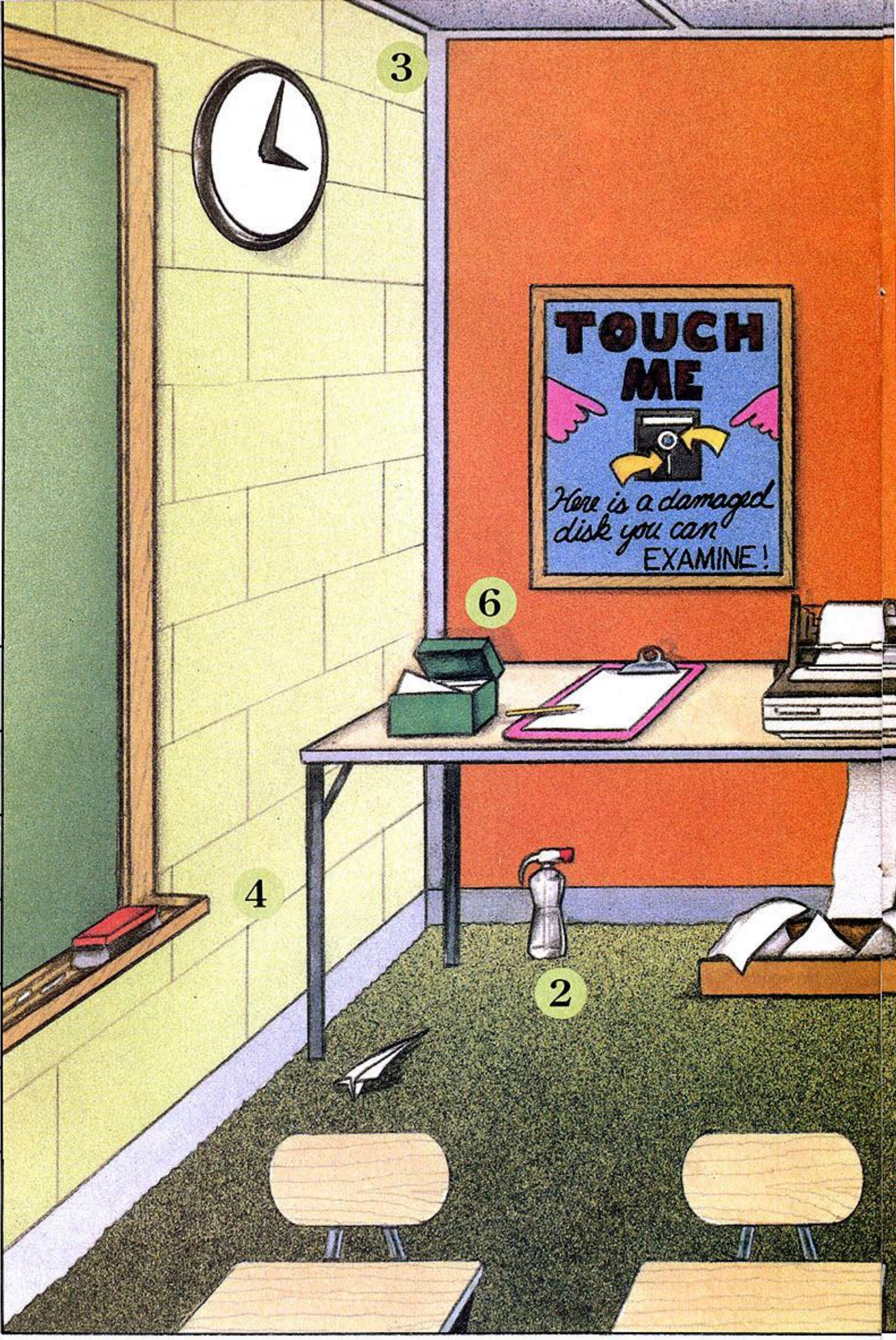
No. 1




COMPUTER PATROL
G
ZIMMERMAN

Don't touch the disk when the red light is on
Or else you might find that your program is gone!

TEN THINGS TO DO THE DAY THE COMPUTER ARRIVES


3
TOUCH ME
Here is a damaged disk you can EXAMINE!
6
4
2

LOOKING FOR SOME PRACTICAL IDEAS TO GET THAT NEW COMPUTER CORNER OF YOUR CLASSROOM OFF TO A GOOD START? HERE ARE TEN OF THEM—ALL INEXPENSIVE, DO-IT-YOURSELF IDEAS THAT OTHER TEACHERS TELL US WORK FOR THEM.

1 Keep It Portable

Put your computer on a roll-around table to make it easy to move to the front of the room for class demonstrations, or to other classrooms.

Extra Tip: You can solve security problems by easily rolling your micro into a closet you can lock overnight.

2 Spray Your Carpet

Avoid carpet-produced static electricity (which can play havoc with a computer) by spraying your carpet with a mixture of fabric softener (Stay-Puf, for example) and water.

3 Avoid Sunlight Glare

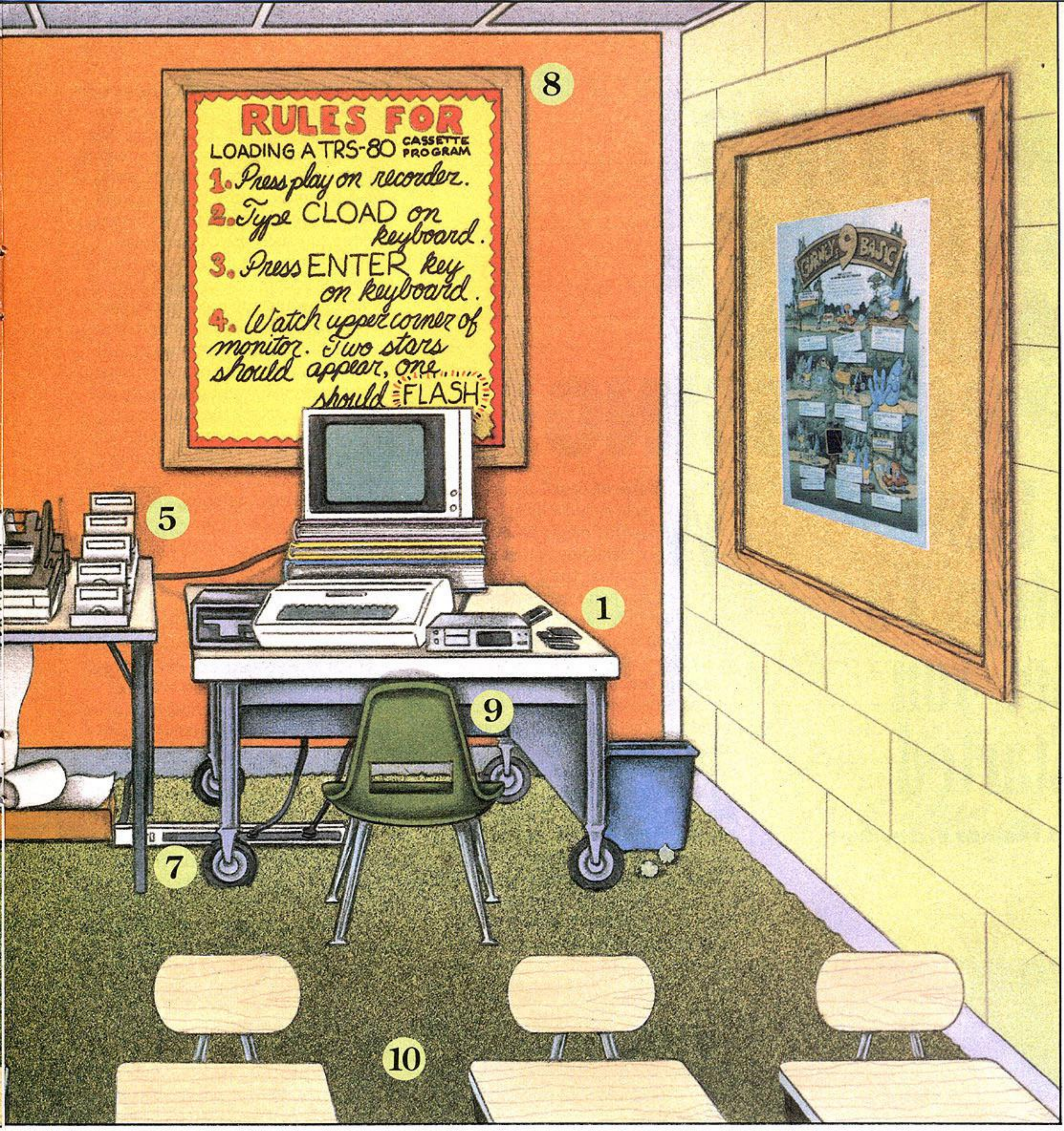
Position your computer away from direct sunlight to prevent eye discomfort from window glare.

4 Beware of Chalk Dust

Chalk and diskettes don't mix. So keep your computer and disks away from the chalk board. **Extra Tip:** Buy a vinyl computer cover (not a cloth one, which can present problems) for extra computer protection.

5 Allow for Expansion

Plan for the addition of peripherals (a printer, for example) by placing an extra "work-space table" next to your computer station.


8
RULES FOR
LOADING A TRS-80 CASSETTE PROGRAM
1. Press play on recorder.
2. Type CLOAD on keyboard.
3. Press ENTER key on keyboard.
4. Watch upper corner of monitor. Two stars should appear, one should FLASH
5
1
9
7
10

6 **Provide Activity Cards**
Keep a file box of Programming Task Cards handy for "free time" at the computer. (**Editor's Note:** For suggestions on how to make your own Programming Task Cards, see Micro Ideas in this issue.)

7 **Collect the Cords**
Buy a power strip (available for around $20 at any hardware store) to eliminate the massive tangle of cords and wires from your computer, video monitor, disk drive or tape deck, and peripherals.

8 **Make Operating Instructions Clear**
Design a large poster for above the computer that clearly lists the instructions for turning on and loading the computer. **Extra Tip:** Rules for proper diskette care should also be posted prominently near the computer.

9 **Make It Comfortable**
Avoid using adult-sized tables with small-sized kids. If the monitor is separate from the keyboard, you may need to build a stand (a couple of thick books will do the trick) to raise the monitor six inches or so above the keyboard.

10 **Put It "Out of View"**
Eliminate distracting the rest of the class by keeping the computer's monitor out of their direct line of vision. (You may even build short dividers between the computer corner and the rest of the room.) **Extra Tip:** Many teachers tell us that it's also best if the screen is within their line of vision—from whatever point in the room they're most often apt to be.

WRITING SKILLS & WORD PROCESSING:

8 Easy Steps To Get You Started

By Thomas E. Boudrot

Thomas Boudrot is a technology manager in the Houston Independent School District in Houston, Texas.

We've all heard about that miracle called word processing—that magic typewriter which fixes errors without erasing, that lets you throw away your red pen forever, that makes writing not only easier, but fun, too!

But, you might ask, will it work for elementary students?

Having trained fourth graders to use a word processing program, I have found that, with planning, a word processor can be part of any elementary school writing program.

Using a text editing program will certainly not turn all your students into budding Shakespeares. But it will probably result in better all-round writing skills. Because correcting errors on a text editor is easy and still results in a clean draft, students spend less time worrying about mistakes and more time concentrating on the content.

I have also found that computer writers tend to write more. While more is not necessarily better, practice makes perfect. Another observation is that students using a text editor feel free to revise and experiment since they know that their words are not permanently etched on paper. As a result, they soon recognize their own writing flaws and produce better sentences.

Students in our district now use word processing regularly to complete writing assignments and publish a student newspaper. Reaching this level of text editing prowess, however, took a lot of planning. We had to build our program slowly and carefully.

To help you make the transition from paper and pencil to keyboard and diskette a little easier, I have outlined below our eight-step procedure for success.

STEP ONE: TEACHERS FIRST!

1 Teaching word processing means teaching a whole new way of writing. That, in turn, means spending extra time learning how to use a text editor yourself. Some word processing packages come with step-by-step tutorials, which could also come in handy as a review or refresher tool for students. Even with a tutorial, though, I would still recommend that you practice exercises over and over until writing a letter on the computer becomes easier than doing it on paper.

You might also want to simplify and condense the user's manual for students to use as a reference tool. Only include the essential information like saving and loading files, moving the cursor, inserting, deleting, changing and printing.

STEP TWO: MORE REFERENCE TOOLS

2 Prepare a colorful poster listing all the major editing and formatting commands of the word processing program you are using. (Another good idea is to make paper copies of the major commands, and have them ready to pass out to students as soon as they start using the text editor for writing assignments.)

You might also want to simplify and condense the user's manual for students to use as a reference tool. Only include the essential information like saving and loading files, moving the cursor, inserting, deleting, changing and printing.

STEP THREE: TRAINING STUDENT LEADERS

3 Select a core group of four or five students to serve as classroom leaders. These students will be your disciples when the going gets rough. Over the course of several weeks, rigorously train the group after school, during recess and on weekends, providing as much hands-on instruction as possible. To motivate the students, award them with a certificate of merit or professional word processor card when they have completed the training session. As the school year progresses, you might want to award these tokens of accomplishment to other students who have demonstrated exceptional word processing ability.

STEP FOUR: LESSON ONE

4 Having trained your leaders, you should have a good feel for the amount of content to cover in the first lesson. Although the discovery method of learning is very useful in many situations, this is one time for the show and tell approach. Getting used to the keyboard, creating and saving sentences, using capitals, and minor editing should take you through the first week. The entire week should be devoted to practicing elements covered.

By pairing leaders and beginners, students should be able to easily save a short assignment on diskette without teacher supervision. I recommend that you have students save text under their own name so that you can quickly scan each student's file at the end of the week and so that students can remember their file names easily.

STEP FIVE: LESSON TWO

5 During the second week, teach students all the major editing commands: inserting, deleting, changing text and moving text. By the end of the week, students should be able to load a file, do all corrections and re-save the file under their names without consulting you or the leaders. Once students have demonstrated their ability to do this, they are ready to tackle any writing assignments.

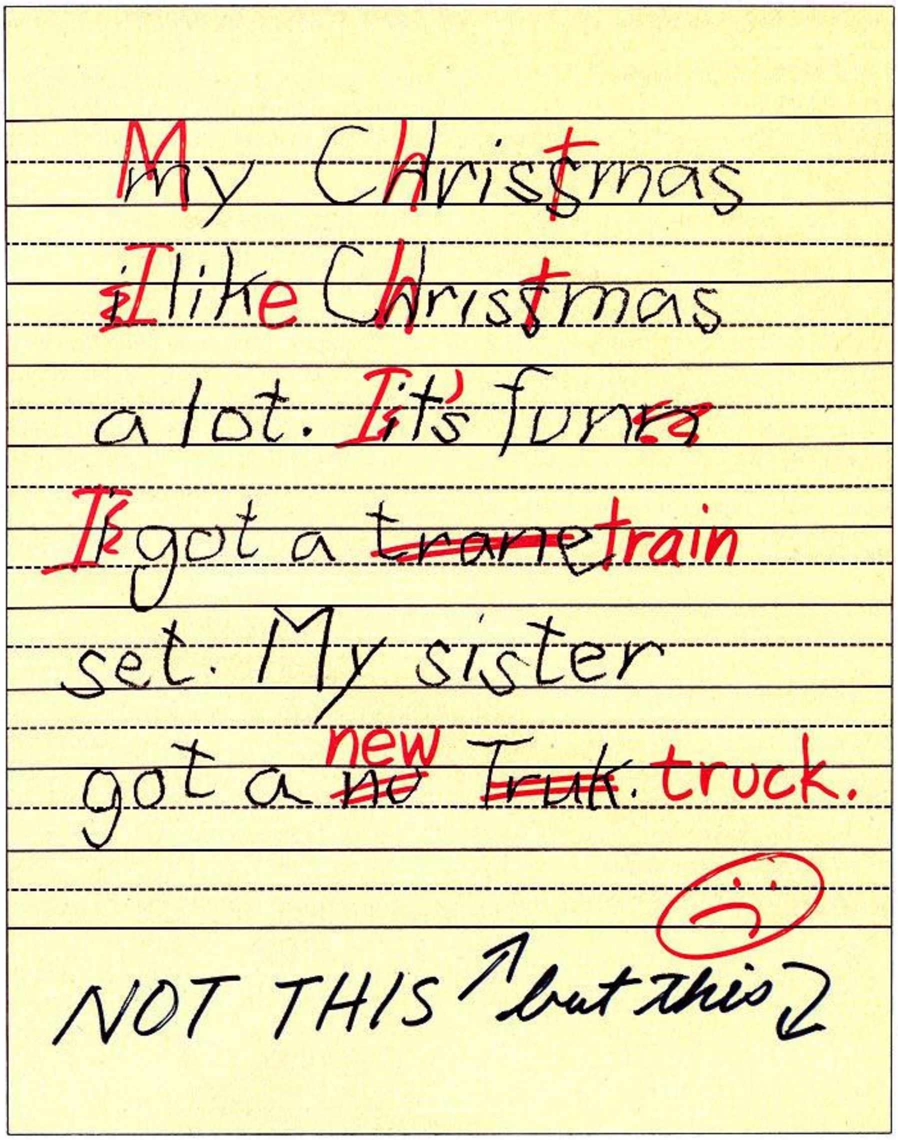
STEP SIX: THE FIRST ASSIGNMENT

6 Whatever writing project you assign to your students, writing the first draft will probably be the most time-consuming and hardest part. For this reason, I suggest that you have students write the first draft in pencil.

As students finish, have them work in pairs at the word processor, allotting about half an hour per pair. The writer should type his/her paper as the partner reads the text aloud, suggesting revisions as the article is being typed. Have students then switch places so that each paper is typed and saved under the author's name.

For future assignments, set up a weekly schedule on the chalkboard where students and their partners can sign in for the half hour slots. Also, keep a running list of completed papers near the computer. Student leaders can act as supervisors to make sure everything runs smoothly.

(Continued)



My Christmas

I like Christmas

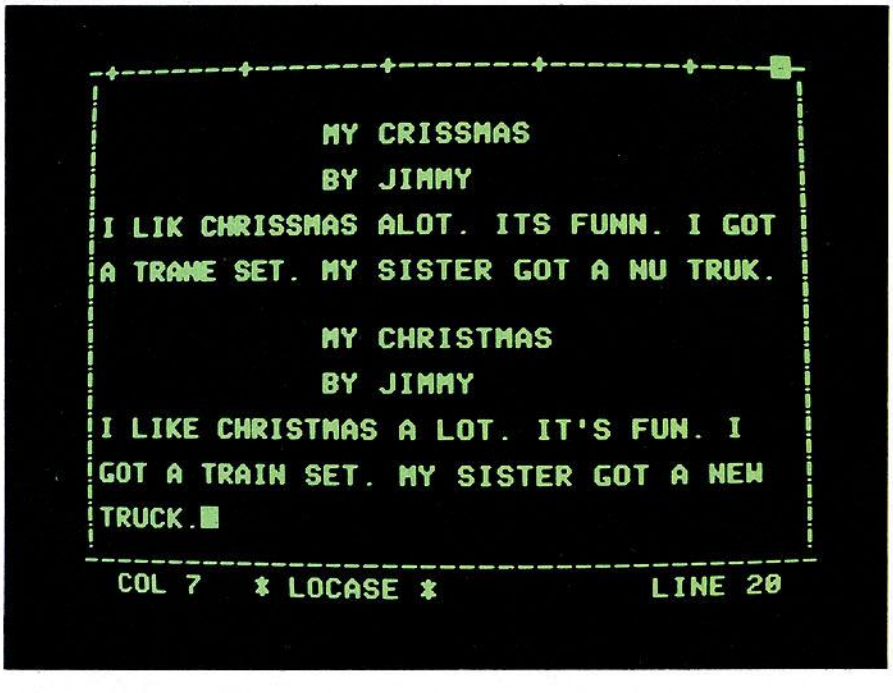
a lot. It's fun.

I got a ~~trane~~ train

set. My sister

got a ~~no~~ new ~~Truk~~. truck.

NOT THIS ↑ but this ↓



```
-+-------+-------+-------+-------+---█-
              MY CRISSMAS
              BY JIMMY
I LIK CHRISSMAS ALOT. ITS FUNN. I GOT
A TRANE SET. MY SISTER GOT A NU TRUK.
              MY CHRISTMAS
              BY JIMMY
I LIKE CHRISTMAS A LOT. IT'S FUN. I
GOT A TRAIN SET. MY SISTER GOT A NEW
TRUCK.█
---------------------------------------
 COL 7    * LOCASE *          LINE 20
```

STEP SEVEN: REVIEWING THE PAPERS

7 Here are two ways to review student papers: on a hardcopy printout or on the screen. If you get a printout of the student's paper, you can make the corrections at your convenience, return the copy to students and have them produce a clean version on the word processor.

If enough word processors are available, you can work directly with students when they load their files. By spending a few minutes with each student, you can make corrections on the screen using erasable marker while fielding individual questions at the same time.

STEP EIGHT: ODDS AND ENDS

8 When all the assignments have been revised, have student leaders print out two copies of every paper. Give each student one copy of their paper to take home. With the second set, start a complete collection of writing assignments to show on parent's day or at open house. Each writing assignment could be a chapter in the collection.

One final note: getting parents involved in word processing can generally be a great help. Once students have learned the basics, one of their assignments could be to train their parents. Parents might also volunteer as proofreaders, working with students either after school or on weekends. A third possibility is to set up a mail system between parents and students which would require students to write letters on the word processor.

For the Beginner

Choosing Your Word Processing Program

By Thomas E. Boudrot

Eight Things to Consider When Purchasing a Word Processing System for Elementary Classroom Use

A word processing program turns your microcomputer into a powerful—almost magical—text editing machine. It makes it possible to add, insert, delete, or move around any words, sentences, or paragraphs you want—quickly and easily. You can then print out the finished product in clean form.

Although you can buy a computer that does nothing but word process, it's cheaper to buy a word processing program that works on whatever computer your school already has. That way, you can use the computer as a word processor in the morning, and then as a tool for CAI in the afternoon.

The advantages of using a word processing program are many. It eliminates tedious rewriting, it makes corrections easier and neater, and it lets you experiment with your writing without worrying about making a final draft right away.

If you are looking for a word processing system (including both the hardware and software) that will be easy enough for your students to operate, be prepared to spend some time and effort. Buying a word processing system for elementary students opens a whole new ball park of things to consider. Smaller fingers, shorter attention spans, low reading levels, and shaky coordination are just a few problems that need to be considered.

Before selecting your system, check out the points listed below.

- **Upper/Lower Case Capability:** With elementary students, an upper/lower case screen display is a must. Some packages do not have a lower case screen display; others require expensive add-ons to produce small letters; and still other packages generate both upper and lower case as a standard feature. This third type of package is the one to go with.
- **Single Key Commands:** Simplicity is the name of the game when teaching word processing to young students. All word processors have keyed commands for inserting, deleting and changing text. Make sure these commands are logical and simple. For example, pressing the I key for inserting and the D key for deleting is much easier to remember than a sequence of assorted other keys.
- **Screen Display:** I recommend word processing software that allows for printing a minimum of 50 characters per line. Some packages have special features for expanding or changing the characters per row, but I have found that, for elementary students' purposes, such advanced features are either too complicated or unnecessary.
- **Documentation:** If you're confused by the user's manual that accompanies a word processing package, then chances are your students will be totally baffled. Make sure the documentation includes an easy-to-read chart of commands with plenty of illustrations. Although elementary students will probably not be able to learn word processing from a manual, they should be able to use the written documentation for review or as a reference tool.
- **Saving and Loading Text:** A disk drive for saving and loading text is worth the investment mainly because the cassette tape storage is slow and cumbersome.
- **Printers:** Some word processing systems work better with certain printers. If your package functions best with a $2000 printer, it just might price you out of the market. Look for a package that is versatile with a wide variety of printers.
- **Keyboard:** A full-size, typewriter-style keyboard is a must. Although flat, touch sensitive keys are popular for programming or CAI uses, they become tiring for little fingers when several paragraphs have to be typed.
- **Monitors:** Monitors are available in either black and white, color or green phosphorous (green letters on a black background). Although color screens are effective for some computer applications, students using word processing systems will appreciate the clarity of green phosphorous monitors.

WESTWARD EXPANSION

Unit: The Westward Movement

Software: "Oregon"

For Grades: 1 2 3 4 [✓ 5] [✓ 6]

Machine: Apple II Plus (32K) DOS 3.3

PROGRAM INFORMATION

Producer: Minnesota Educational Computing Consortium, 2520 Broadway Drive, St. Paul, Minnesota 55113.

Price: $30.00 (includes four other programs and back-up disk)

Description: The time is 1847. The place: Independence, Missouri. Students prepare for a journey across the Oregon Trail by budgeting $700 for Oxen, Food, Ammunition, Clothing, and Miscellaneous Expenses. They then begin their 2,040 mile-trip. Along the way, they encounter hostile Indians, blizzards, illness, and numerous other calamities. If they've budgeted their money well, and make the right decisions along the way, they will reach their goal—Oregon City, Oregon.

Documentation: Excellent. Includes background information about the historical validity of the simulation; a list of situations students may encounter on their journey, along with the frequency of the occurrence and its consequence; two suggested Lesson Plans; and Student Worksheets.,

Related Programs:

- **For the PET:** "Trailwest" (8K cassette); $8.95. Micro-Ed, P.O. Box 24156, Minneapolis, MN 55424

Description: Simulates a journey during the California Gold Rush.

- **For the TRS-80:** "Westward—1847" (32K cassette); $8.95. Vendor: Scholastic Inc., 730 Broadway, New York, NY 10003.

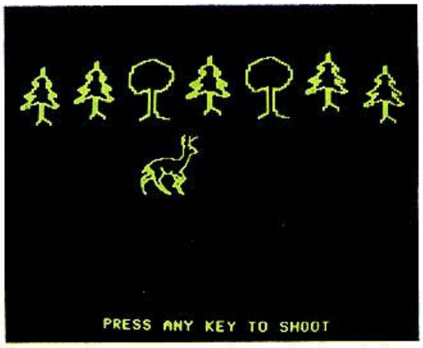
Description: Simulates a journey along the Oregon Trail.

LESSON IDEAS

Objectives: The students will have a better understanding of:

- the hardships and determination of the pioneers traveling west
- map skills
- how to budget time, possessions, and money for the journey.

The pre- and post-viewing activities will help students demonstrate their math and writing skills, as well as their research and creative abilities.



```
PRESS ANY KEY TO SHOOT
```

Young pioneers can choose to hunt deer on The Oregon Trail if their food supply runs low.

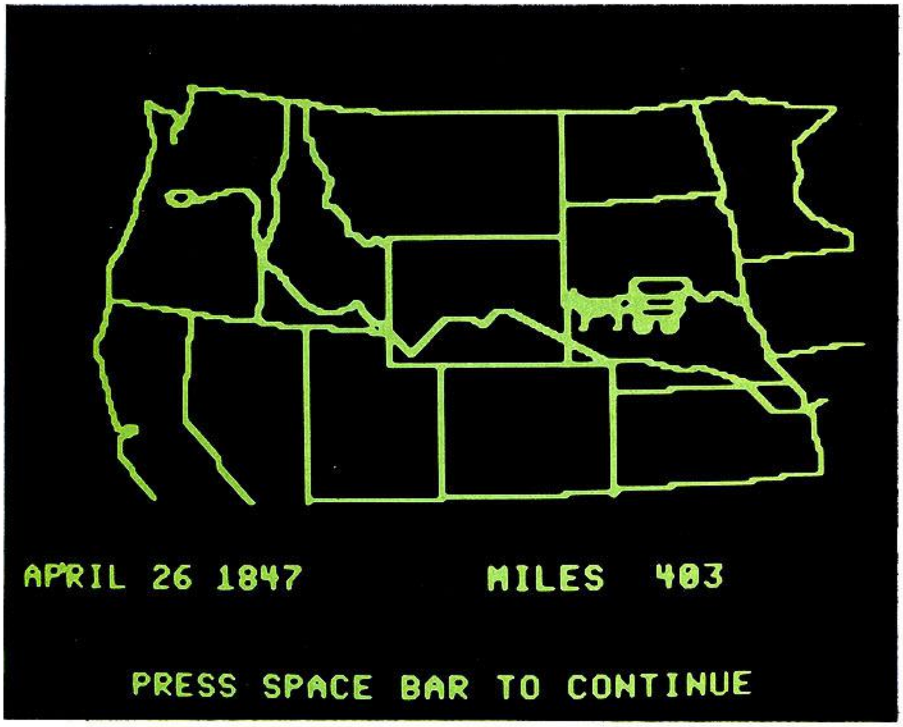
References: *The Oregon Trail* by Francis Packman; Encyclopedia Britannica Vol. 16

Management Planning: Assign teams of two students each. During the run of the program, one student keys in answers, while the other student fills out the Student Worksheet. The program takes approximately 10 to 15 minutes for each run. Allow each team to run the program twice, filling out the Journey Log for each run.

Vocabulary: poisonous, ammunition, encounter, marksman, journey, formalities, pneumonia.

Introducing the Program: Begin by explaining to the students that one of the most famous migrant routes of U.S. history, traversed about 2,000 miles of all kinds of terrain from Independence, Missouri, to the Columbia river country of Oregon. Its greatest popularity as a route to Oregon was in the 1840s when perhaps 12,000 persons traveled the full distance. The trail had been used earlier by a few hundred emigrants, and as late as 1900 an occasional traveler could still be seen on it.

In 1849 the homeseekers moving along the eastern part of the Oregon trail were joined by a great flood of gold seekers bound for California. At least 50,000 crowded through South Pass in the summer of 1850, almost all of them on their way to the California gold fields, and heavy traffic continued for years thereafter. The eastern half of the Oregon trail might more appropriately be called the Oregon-



```
APRIL 26 1847          MILES  403

     PRESS SPACE BAR TO CONTINUE
```

The Conestoga wagon sets out on its 2,040-mile journey from Independence, Missouri, to Oregon City, Oregon.

Lesson Ideas By: JEAN TENNIS, Fifth Grade Teacher, Radcliffe Elementary School, Nutley, New Jersey

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(Continued)
California-Utah trail, inasmuch as the people bound for California and Utah after 1847 outnumbered those who were bound for Oregon by 50 to 1.

From Independence, Missouri, to the Columbia took four to six months in covered wagons drawn by oxen, mules or horses. There were many sharp inclines, dangerous water crossings and long stretches of desert. Occasionally, Indians ran off the livestock or attacked the emigrants. Yet many of the travelers found time to pause in Wyoming to carve their names on Register cliff and Independence rock, and their work was still visible more than a century later.

Then tell your class that they are about to venture on a simulated trip along the Oregon Trail on the computer. They will encounter situations similar to those that the pioneers actually encountered when they traveled the trail. And they will be required to make life- and-death decisions in order to reach the West Coast. Some of them will make it—and some will not.

Warm-up/Pre-Program Activities:

1. As a group, review the vocabulary words with your students. Have them keep a list of any other new or unfamiliar words they encounter in the program.
2. Give them a map of the United States. Have them locate Independence, Missouri, and Oregon City, Oregon.
3. Ask them to imagine that they were going to take a trip by Conestoga wagon today. What possessions would they take? What jobs would they assign to each family member? Have them write a short story about what they think one day in their journey might be like.
4. Have them research other facts about the Oregon Trail. For example, what Indians traveled the area of the Oregon Trail? Besides the Oregon Trail, the Santa Fe Trail was also popular. Why did some settlers go to the Northwest and some to the Southwest? What could each area offer? How did the trails differ in weather and hardships?

During the Program:

1. Give each student the Oregon Trail Worksheet to fill out as they run the program.
2. After the run is completed, have students trace on the Worksheet map the actual trip they took on the computer, marking where each incident took place.

Extending/Post-Program Activities

1. Explain to students that a Conestoga wagon crept along at only about 2 miles an hour. If the pioneers were lucky, they might cover a distance of 40 miles a day. Usually, though, 20 miles was the average journey. How many hours did they travel each day? At 2 miles per hour, how long did the journey from Independence to Oregon City take? How long would the journey take today in a car, train or airplane?
2. Research and write a report about one of the following explorers or people connected with the Oregon Trail: Kit Carson, John Fremont, Lewis and Clark, Sacajawea, John Jacob Astor.
3. Write about some adventure E.T. might have had if he visited the U.S. in 1840 and landed on a Conestoga wagon traveling west on the Oregon Trail.

TEXTBOOK CORRELATIONS

Basal: Concepts and Understanding: The Educational Research Council Social Science Program
Publisher: Allyn and Bacon, Inc. (1982)
Textbook: *The Making of Our America;* **Grade 5; pp:** 296-297

Basal: American Book Social Studies
Publisher: American Book Company (1979)
Textbook: *Americans;* **Grade 5; pp:** 190

Basal: Follett Social Studies
Publisher: Follet Publishing Company (1977)
Textbook: *The Americas;* **Grade 5; pp:** 321-322

Basal: Our Land and Heritage
Publisher: Ginn and Company (1979)
Textbook: *Our People;* **Grade 4; pp:** 206-207

Basal: Windows on Our World
Publisher: Houghton Mifflin Company (1980)
Textbook: *America: Past and Present;* **Grade 5; pp:** 280-285

Basal: Macmillan Social Studies
Publisher: Macmillan Publishing Co., Inc. (1982)
Textbook: *The United States and the Other Americas;* **Grade 5; pp:** 346-347

Basal: Our Widening World
Publisher: Rand McNally & Company (1980)
Textbook: *Across America;* **Grade 5; pp:** 208-215

Basal: Scholastic Social Studies
Publisher: Scholastic Inc. (1983)
Textbook: *Our Country's History;* **Grade 5; pp:** 210-211

The Oregon Trail

You are about to set out on a trip from Independence, Missouri, to Oregon City, Oregon. It will take you 2040 miles—if you make it. Before you begin, fill out the Information below.

INFORMATION

Travelers' Names

1. ____________________

2. ____________________

Date: __________ Trip No. __________

Now, put the disk into the disk drive, and follow the instructions. You will be asked to do two things: (1) Decide how good a marksman you are; and (2) Decide how much you want to spend on Oxen, Food, Ammunition, Clothing, and Miscellaneous Supplies. Enter that information into the computer. Then, record that information below.

GETTING READY

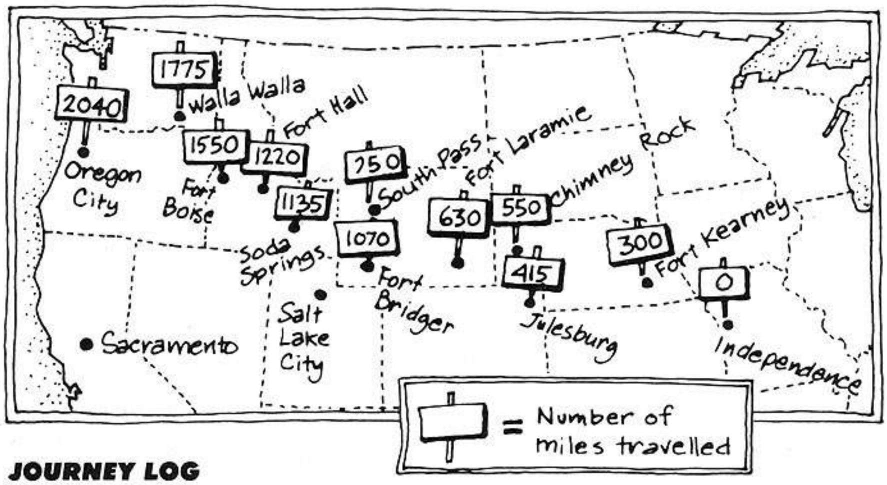
1. How good a shot are you? (Check one.)

________ Ace Marksman
________ Good Shot
________ Fair to Middlin'
________ Need Practice
________ Shaky Knees

2. Record of Expenses
(You have $700 to spend.)

Item	Amount Spent
Oxen	$________
Food	$________
Ammunition	$________
Clothing	$________
Miscellaneous Supplies	$________
TOTAL SPENT	$________
BUDGET	$700.00
Amount Spent	$________
Cash Balance	$________

You are now ready to begin your journey. As you travel across the country, keep a diary of the Events that happen to you, the number of miles you cover, and your approximate location. You can use the form below. Good luck!


2040
Oregon City
1775
Walla Walla
1550
Fort Boise
1220
Fort Hall
1135
Soda Springs
750
South Pass
1070
Fort Bridger
630
Fort Laramie
550
Chimney Rock
415
Julesburg
300
Fort Kearney
0
Independence
Sacramento
Salt Lake City
= Number of miles travelled

JOURNEY LOG

Year: 1847

Date	Events	Miles Covered	Location
March 29			
April 12			
April 26			
May 10			
May 24			
June 7			
June 21			
July 5			
July 19			
August 2			
August 16			
August 31			
Sept. 13			
Sept. 27			
Oct. 11			

AFTER THE JOURNEY

Did you make it all the way to Oregon City, Oregon? If you did, CONGRATULATIONS, You would have made a great pioneer. If not, record what happened below

Date: ____________________ Location ____________________

Miles Covered: ______________ Reason Trip Ended: ______________

Permission is granted to reproduce this Worksheet for classroom use.

Teaching About Computers—Without Computers

Computing in March

By Lorraine Hopping

This ready-to-copy Computing Calendar for March (see next page) will help keep your students learning about computers all month long.

Teacher's Guide for Computing in March

BUG DAY (MONDAYS)

• For younger students, put some two-line programs on the board for comparison. For example:

```
10 PRINT E.T. PHONE HOME
20 END
10 PRINT "E.T. PHONE HOME"
20 END
```

Ask them to point out the differences in the two programs. • Hold a Debugging Contest in which teams of students write their own short programs (with bugs in them) and challenge other teams to debug the programs. • Have older students predict the outcome of the programs on the calendar, debug them, and then predict the outcome of the corrected programs. • Collect the results of the activity days—flowcharts, programs, pictures, etc.—and the bug days to assemble into a scrap book.

QUIZ DAY (TUESDAYS)

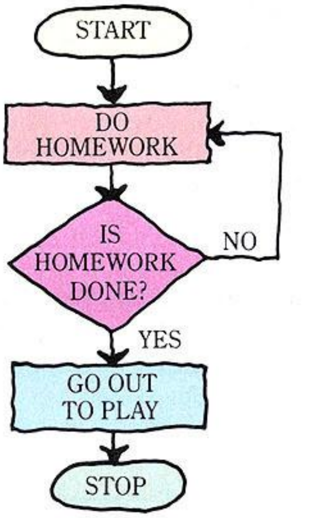
• Make up flash cards for each quiz day question and history/fact day item with the answers printed on the back. By the end of the year, you will have a complete set of computer-fact flash cards for review. • Have older students write a program that will ask computer fact questions, accept answers, and provide feedback for correct and uncorrect answers. • Demonstrate how to do arithmetic problems on an abacus and have older students try doing some addition problems using one. •Assign a report on Pascal—the language or the mathematician. • Have students collect pictures of computers and famous people in computing from newspapers and computer magazines to include on a timeline. • Have older students write newspaper headlines for each year represented on the timeline. • Start a computer mini-encyclopedia with short reports on computer-related topics—simulation programs, counting devices, computer components, etc. • Draw up a chart of all the computer languages students can think of, when, why and by whom they were developed, what they are used for today, and what their acronyms stand for. • Discuss with students three ways to INPUT information into the computer.

WORD DAY (WEDNESDAYS)

• Ask students to think of other examples of generic software (records, filmstrips, slides) and hardware (stereo, filmstrip projector, slide projector). • Start a dictionary of computer terms, adding a new term each week. Have students come up with their own definitions—and daffynitions—of the words. As a class, decide on a final version of the definition, which will appear in the dictionary. Include examples and illustrations where appropriate. • Discuss different types of memory (RAM, ROM, etc.). For older students, introduce words like hard disk, floppy disk, kilobyte, and other related terms.

ACTIVITY DAY (THURSDAYS)

• Put this sample flowchart (below) on the chalkboard and have students add to it and modify it. Make a list of other events (a football game, a day in the life of a student, a movie plot, etc.) which students could put into a flowchart. • To help students program a "human turtle," suggest they use four commands—Forward, Backwards, Left, and Right—to direct the turtle in "walking" a square, a triangle, a rectangle, or a circle. • Have students draw a picture of their future robot to hang on the wall. • Give students a "Knock Knock" joke program and have them insert their favorite jokes.



HISTORY/FACT DAY (FRIDAYS/SUNDAYS)

• Draw a timeline on a long sheet of paper, beginning with 3000 B.C. and ending with 1983. Include dates like 1642, 1671, 1780, late 1800's, 1946, and 1977. Fill in the events and facts listed on the calendar as they appear each week. • Divide the class into three or four groups. Assign a series of increasingly difficult arithmetic problems and have each group devise a counting system to do them using fingers, sticks, stones or other objects. • Show students punched cards from a player piano and discuss how the cards work. Try to find other examples of punch cards—phone bills, test answer cards, etc.

JOKE DAY (SATURDAYS)

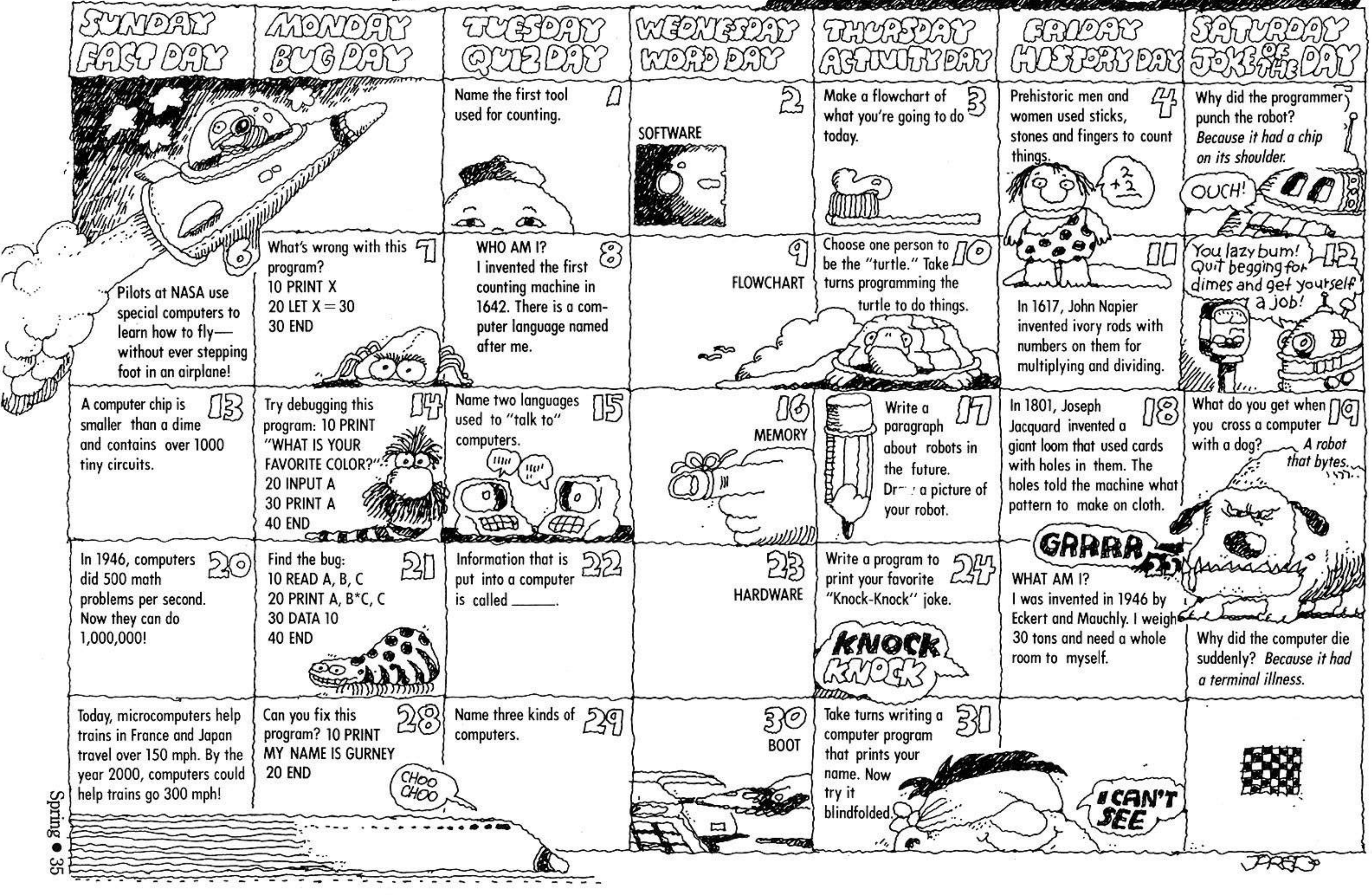
• Have students come up with their own computer jokes. Send them to *Teaching and Computers,* 730 Broadway, New York, NY 10003. We will pay $5 for every joke we use in upcoming Computing Calendars.

ANSWERS TO QUIZ DAY
March 1: The abacus; March 8: Blaise Pascal; March 15: BASIC, FORTRAN, COBOL, LISP, Logo, Pascal, etc.; March 22: INPUT; March 29: Micro, Mini and Mainframe (or Super) computer.

ANSWERS TO BUG DAY
March 7: 10 LET X = 30 and 20 PRINT X: March 14: 20 INPUT A$ and 30 PRINT A$; March 21: 30 DATA 10, 20, 30; March 28: 10 PRINT "MY NAME IS GURNEY"

ANSWER TO HISTORY DAY (March 25):
UNIVAC

ELECTRONIC CALENDAR MARCH


ZAP!
OUCH!
You lazy bum! Quit begging for dimes and get yourself a job!
GRRRR
KNOCK KNOCK
CHOO CHOO
I CAN'T SEE

SUNDAY FACT DAY	MONDAY BUG DAY	TUESDAY QUIZ DAY	WEDNESDAY WORD DAY	THURSDAY ACTIVITY DAY	FRIDAY HISTORY DAY	SATURDAY JOKE OF THE DAY
		1 Name the first tool used for counting.	2 SOFTWARE	3 Make a flowchart of what you're going to do today.	4 Prehistoric men and women used sticks, stones and fingers to count things.	Why did the programmer punch the robot? *Because it had a chip on its shoulder.*
6 Pilots at NASA use special computers to learn how to fly—without ever stepping foot in an airplane!	7 What's wrong with this program? 10 PRINT X 20 LET X = 30 30 END	8 WHO AM I? I invented the first counting machine in 1642. There is a computer language named after me.	9 FLOWCHART	10 Choose one person to be the "turtle." Take turns programming the turtle to do things.	11 In 1617, John Napier invented ivory rods with numbers on them for multiplying and dividing.	12
13 A computer chip is smaller than a dime and contains over 1000 tiny circuits.	14 Try debugging this program: 10 PRINT "WHAT IS YOUR FAVORITE COLOR?" 20 INPUT A 30 PRINT A 40 END	15 Name two languages used to "talk to" computers.	16 MEMORY	17 Write a paragraph about robots in the future. Draw a picture of your robot.	18 In 1801, Joseph Jacquard invented a giant loom that used cards with holes in them. The holes told the machine what pattern to make on cloth.	19 What do you get when you cross a computer with a dog? *A robot that bytes.*
20 In 1946, computers did 500 math problems per second. Now they can do 1,000,000!	21 Find the bug: 10 READ A, B, C 20 PRINT A, B*C, C 30 DATA 10 40 END	22 Information that is put into a computer is called ______.	23 HARDWARE	24 Write a program to print your favorite "Knock-Knock" joke.	25 WHAT AM I? I was invented in 1946 by Eckert and Mauchly. I weigh 30 tons and need a whole room to myself.	Why did the computer die suddenly? *Because it had a terminal illness.*
Today, microcomputers help trains in France and Japan travel over 150 mph. By the year 2000, computers could help trains go 300 mph!	28 Can you fix this program? 10 PRINT MY NAME IS GURNEY 20 END	29 Name three kinds of computers.	30 BOOT	31 Take turns writing a computer program that prints your name. Now try it blindfolded.		

LOGO LEARNING

By Barbara Bowen

Using Logo in the Classroom: The Project Approach

This "project approach" to using Logo with young children combines teacher-directed activity and discussions with student-initiated and planned activity.

In one fourth grade class, a young boy had decided to create a stick-figure person as his Logo project. But he was stuck. He couldn't figure out how to make the circle he needed for the head.

As he talked with one of his friends about his problem, his friend realized that the WHEEL procedure he had written for his CAR project would also work for a HEAD procedure for his friend. All they needed to do was to figure out how to make it a little bigger. Suddenly, they were launched upon an exploration of variables—how changing the input numbers used by FORWARD and RIGHT in the CIRCLE procedure changes the circle that is drawn.

The two youngsters were involved in a "project approach" to using Logo—an approach in which the teacher provides information, helps students to clarify their thinking, and organizes discussions about students' developing work. At the same time, students plan, try-out, and debug their own projects. They are encouraged to interact with one another and to exchange ideas as they develop their projects. In a classroom with 25 to 30 students, each one can explore many different kinds of programs and different ways of thinking and problem-solving.

What follows is an outline for a beginning Logo lesson, utlizing the project approach.

Objective: Students will put together two or three simple procedures, which they have defined, to make something else.

Prerequisites for This Lesson

The student should:

- Understand the five basic turtle commands: FORWARD, BACK, RIGHT, LEFT, and CLEARSCREEN;
- Have experience using those commands with different input numbers to "drive" the Turtle around;
- Have experience drawing simple

Barbara Bowen is Director of Apple Education Foundation, Palo Alto, CA.

figures with the Turtle, such as a square, an equilateral triangle, a circle, and a rectangle, as well as simple letters of the alphabet;
- Understand how to define simple procedures using TO.

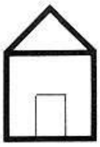
Management Planning

- Allow 25 to 40 minutes of computer time per session for each student or group of students. (Primary students may work for less time, but should have at least 20 minutes.)
- Students can work alone, but working in groups of 2 or 3 is often more productive.
- Make sure that a chart with basic Turtle commands is clearly visible to children working at the computer; it's also helpful to have another chart which shows how to define procedures.
- Allow three to six sessions for students to develop their projects.

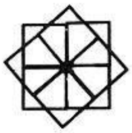
Beginning Project Work

1. Review with students the procedures they've learned for drawing a square, a triangle, and a circle.
2. Ask them to think of different pictures or designs they could make, using those shapes.
3. Assign each student or group of students the task of coming up with a picture they can draw on the computer, using two or three simple procedures they've already learned. For example:

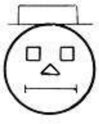
- HOUSE: Made from a SQUARE procedure and a TRIANGLE procedure. and a RECTANGLE procedure



- A design (SPIN-SQUARE) made by rotating the Turtle after each Square procedure



- A HEAD made from procedures to draw CIRCLE, SQUARE, and TRIANGLE



During Project Work

- Hold whole class sessions to discuss "bugs" and to share students' successes in debugging their projects.
- Encourage informal discussions and exchange of information among students.
- Help students develop procedural thinking by encouraging them to write each "part" of their project as a separate, independent procedure.
- Have students save the results of each session's computer work to a file on a disk. It's a good idea to provide a disk for each child to use to record his or her work during the year. (The files of a student's developing project work provide an interesting and rich record of his or her emerging thinking.

Extending Projects

Once students have developed a simple project using two or three procedures, encourage them to elaborate on it or make it a part of a larger project. For example, students can:

- Add windows, door, and a chimney to HOUSE
- Put a road in front of the HOUSE
- Put a tree next to the House
- Put several HOUSES together to form a VILLAGE
- Draw a car on the road

Students will come up with many ideas. One of your primary tasks will be to help them keep their projects manageable and simple.

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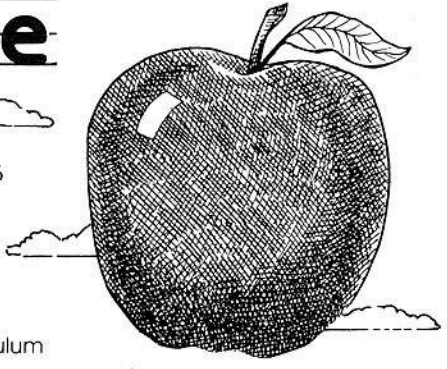

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AN ELECTRONIC MAILBOX

By Bob Muller and Debbie Kovacs

Here's a ready-to-use program that will have your students eagerly lining up to send greeting cards of all kinds – electronically!

Everyone loves to receive greeting cards. But the next time a special holiday rolls around, why not surprise your students with a new way to send—and receive—greeting cards electronically. This issue's Program of the Month is all you need.

HOW TO USE THE PROGRAM

The program is designed to be used in a number of different ways with both primary and upper elementary students.

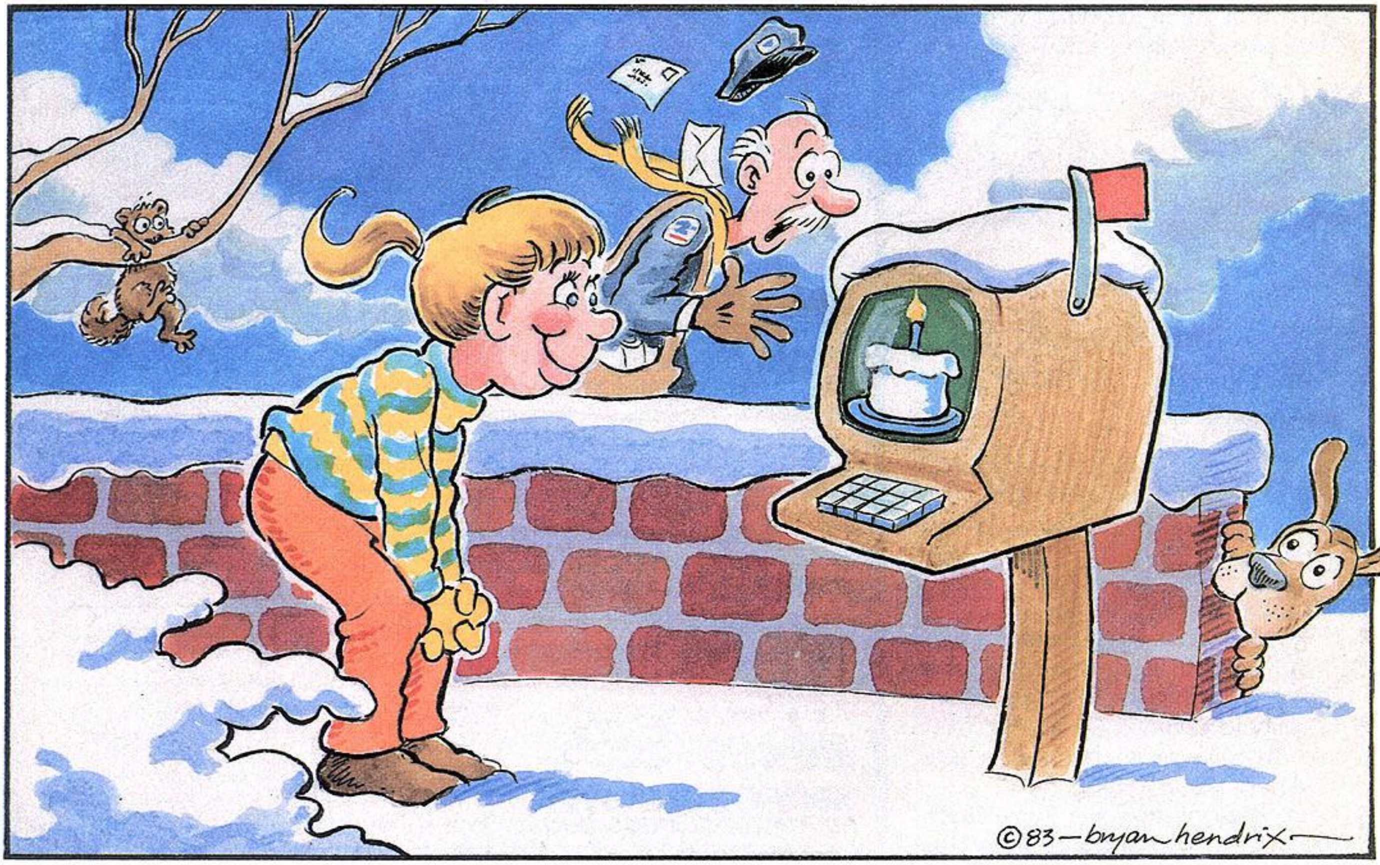
1. You or one of your students can simply type the program listing into the computer, and then save the program on a cassette or disk. A few days before a special holiday, set some time aside for students to enter their special holiday messages. Then, on that special day, have the computer set up and ready for students to see who has sent them messages. (Note: In order to insure that all students receive at least one holiday greeting, you might enter your own messages to each of your students.)

2. You can use the flow chart and accompanying program notes as the basis for a programming lesson, detailing the structure and function of a simple data base.

3. You can challenge your students to modify the program for other "electronic mailbox" applications. For example, students might modify the program so that it is specifically for sending monthly birthday greetings to classmates.

4. Suggest that your more advanced students create some graphics for the greeting card program.

In future issues, we'd like to share

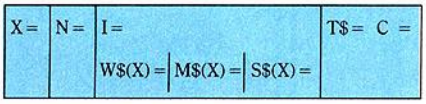


your favorite program with other elementary school teachers throughout the country. For each original program that we print in Program of the Month, we'll pay $100. So send your favorite program today. Be sure to include a description of the program and how you use it with your class, along with the program listing and sample run. Send your program to: Program of the Month, *Teaching and Computers*, 730 Broadway, New York, NY 10003.

SOME THINGS YOU SHOULD KNOW

Before reading the step-by-step explanation of the Greeting Card Program's flow chart, here are some things you should know:

- **Explanation of the Pigeonhole System:** Each of the variables in the program is stored in a special memory location inside the computer. We'll refer to these memory locations as "pigeonholes"—just like the pigeonholes mail handlers use when they sort mail. The diagram below shows each pigeonhole with its appropriate variable.



- **Explanation of the Variable Names:**

X = Pigeonhole (or memory location) that stores the total number of greetings the class will send
N = Pigeonhole that stores the number of greetings a single student will send
I = Loop Pigeonhole that stores the information for each greeting. That information is broken down within this loop into three parts:
W$(X) = (pronounced "W-string sub-X"): Remembers WHO each greeting is for;
M$(X) = Remembers each greeting's "message";
S$(X) = Remembers each greeting's "signature"
C = Loop pigeonhole that "delivers" each complete greeting card
T$ = "Holding variable"—a spot in the program that holds information temporarily until it is needed

---

Bob Muller is Computer Education Specialist for the Ridgewood School District, Ridgewood, NJ, and an adviser to* T&C. *Debbie Kovacs is Creative Director for Software Development at Scholastic.

PROGRAM LISTING FOR "AN ELECTRONIC MAILBOX"

```
]LIST

5  REM  ELECTRONIC MAIL
10  DIM W$(100),M$(100),S$(100)
15  LET X = 0
20  REM  OUTER LOOP
25  HOME
30  PRINT "WELCOME TO THE ELECTRONIC MAILBOX"
35  PRINT
40  PRINT
45  PRINT "TODAY YOU'LL BE SENDING GREETING CARDS!"
50  PRINT
55  PRINT
60  PRINT "PRESS THE RETURN KEY TO GO ON."
65  INPUT T$
70  HOME
75  PRINT "HOW MANY CARDS DO YOU WANT TO SEND";
80  INPUT N
85  REM  INNER LOOP
90  FOR I = 1 TO N
95  LET X = X + 1
100  PRINT
105  PRINT "WHO ARE YOU SENDING THE CARD TO";
110  INPUT W$(X)
115  PRINT
120  PRINT "WHAT DO YOU WANT THE CARD TO SAY";
125  INPUT M$(X)
130  PRINT
135  PRINT "HOW DO YOU WANT TO SIGN THE CARD";
140  INPUT S$(X)
145  HOME
150  NEXT I
155  PRINT "IS THERE ANYONE ELSE WHO WANTS TO SEND A CARD?";
160  PRINT " (PRESS 'Y' OR 'N')"
165  INPUT T$
170  HOME
175  IF T$    = "Y" THEN 30
180  REM  DISPLAY GREETING CARDS
185  FOR C = 1 TO X
190  PRINT
195  PRINT "THERE IS MAIL FOR ";W$(C);"."
200  PRINT
205  PRINT
210  PRINT "PRESS THE RETURN KEY TO GO ON."
215  INPUT T$
220  HOME
225  PRINT
230  PRINT
235  PRINT
240  PRINT "DEAR ";W$(C)
245  PRINT
250  PRINT M$(C)
255  PRINT
260  PRINT
265  PRINT "HAVE A GOOD DAY!"
270  PRINT
275  PRINT S$(C)
280  PRINT
285  PRINT
290  PRINT "PRESS THE RETURN KEY TO GO ON."
295  INPUT T$
300  HOME
305  NEXT C
310  END
```

Editor's Note: *This program has been written for the Apple II Plus microcomputer. For modifications that are necessary to use this program with other microcomputers, see page* 41.

• **How to Use the Pigeonhole System:** We've set up all of the pigeonholes as though the program were about to run for the first time. As you walk through the flow chart, you may want to enter and update the information the different pigeonholes will contain so that you can observe the way the computer stores and uses the information in its memory.

• **One More Thing Before We Begin:** Structurally, this program is divided into three loops. Each loop describes a certain completed action, which is necessary to the running of the program. The three loops are:

a. The Inner Loop (flow chart steps 4–9): This "makes" the valentine and counts it;
b. The Outer Loop (flow chart steps 2–10): This stores the valentine and makes sure there are no more valentines to be made by anyone;
c. The Last Loop (flow chart steps 11–13): This displays the valentine cards one at a time.

A GUIDED TOUR OF THE GREETING CARD PROGRAM'S FLOW CHART

Here's a step-by-step explanation of the Greeting Card Program. For purposes of this example, let's pretend that a student named Bob wants to send three greeting cards for Valentine's Day to three different students in his class. We'll walk through the program's flow chart, and you'll see what happens.

THE FLOW CHART

Step 1: INITIALIZE COUNTERS FOR VALENTINES: X = 0

This program contains a counter. Its function is to keep track of the total number of greeting cards to be sent. By setting the greeting card counter at 0, you're telling the computer to get ready to start counting a batch of greeting cards. Look at the diagram of the pigeonholes and find the pigeonhole assigned to X. Because there are no greeting cards stored there as yet, X = 0. This process is called "initializing the counter."

Step 2: DISPLAY FIRST SCREEN

This "Welcome" screen signals the beginning of the program.

Step 3: NUMBER OF VALENTINES TO BE SENT: N

At this step in the program, the computer asks the user how many greeting cards he or she wishes to send. It then stores that number in a pigeonhole called N. In our example, N=3.

Step 4: FOR I = 1 TO N

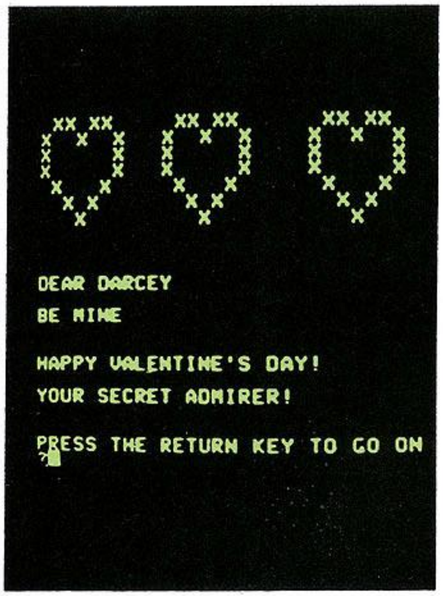
This step tells the computer to do a certain task a certain number of times. It begins a loop which allows the computer to get the messages for N number of greeting cards (in this case 3). At the beginning of the program, the value of I is 1. When I is larger than 3, the program moves on to the next loop (follows the arrows on the right-side of the flow chart).

Step 5: COUNT VALENTINES: X = X +1

Here, we're asking the program's counter to add one greeting card to the pigeonhole location X. You can read this statement by saying: "The new value of X will become the old value of X plus 1."

Step 6: "TO WHOM ARE YOU SENDING THE VALENTINE?" W$(X)

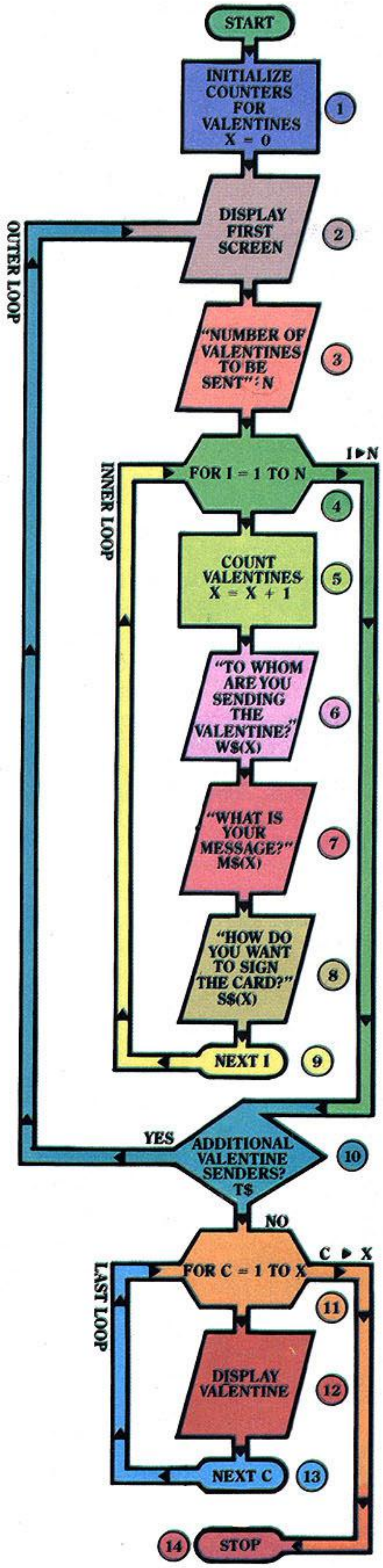
At this step, the program will ask the user to whom the greeting card is to be sent. It will then store that information in the column of our "sub-pigeonholes" headed W$(X). Note: Each of these "sub-pigeonholes is technically called an array. In this array, X stands for the number of cards Bob will send, and W$ stands for WHO will receive the cards. Let's say that Bob



```
DEAR DARCEY
BE MINE

HAPPY VALENTINE'S DAY!
YOUR SECRET ADMIRER!

PRESS THE RETURN KEY TO GO ON
?
```


START
INITIALIZE COUNTERS FOR VALENTINES X = 0
1
DISPLAY FIRST SCREEN
2
OUTER LOOP
"NUMBER OF VALENTINES TO BE SENT": N
3
I ▶ N
FOR I = 1 TO N
4
INNER LOOP
COUNT VALENTINES X = X + 1
5
"TO WHOM ARE YOU SENDING THE VALENTINE?" W$(X)
6
"WHAT IS YOUR MESSAGE?" M$(X)
7
"HOW DO YOU WANT TO SIGN THE CARD?" S$(X)
8
NEXT I
9
YES
ADDITIONAL VALENTINE SENDERS? T$
10
NO
C ▶ X
FOR C = 1 TO X
11
LAST LOOP
DISPLAY VALENTINE
12
NEXT C
13
14
STOP

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PROGRAM MODIFICATIONS

If You Have a(n)	Change	From	To
Atari	(Delete) lines 25, 70, 145, 170, 220, 300	HOME	———————
PET	Line 25	HOME	CLR:PRINT" "
	Lines 25, 70, 145, 170, 220, 300	HOME	PRINT" "
	Lines 65, 215, 295	INPUT T$	GET T$: IF T$ = "Y" THEN GOTO 65, 215, 370
	Lines 60, 210, 290	"PRESS THE RETURN KEY TO GO ON."	"PRESS ANY KEY TO GO ON."
TI	Lines 25, 70, 145, 170, 220, 300	HOME	CALL CLEAR
	Lines 60, 210, 290	"PRESS THE RETURN KEY TO GO ON."	"PRESS THE ENTER KEY TO GO ON."
TRS-80	Lines 25, 70, 145, 170, 220, 300	HOME	CLS
	Lines 60, 210, 290	"PRESS THE RETURN KEY TO GO ON."	"PRESS THE ENTER KEY TO GO ON."

wants to send the first of three cards to Matilda. He types in the name and it is stored in the location W$(1).

Step 7: "WHAT IS YOUR MESSAGE?" M$(X)

Like the step above, the array M$(X) stores each greeting card message. The message to Matilda will be stored in location M$(1).

Step 8: "HOW DO YOU WANT TO SIGN THE CARD?" S$(X)

This array, called S$(X), stores each greeting card's signature. Bob's signature to Matilda—"Your Secret Admirer"—would be stored in location S$(1).

Step 9: NEXT I

The computer now moves back to Step 4 and increases the value of I to 2. (Follow the arrow on the left side of the inner loop back up to the hexagon labelled Step 4.) The program then continues to move the user through the INNER LOOP—Steps 4–9—until I is greater than (>) N.

Step 10: ADDITIONAL VALENTINE SENDERS? T$

This step asks the user if anyone else would like to send a greeting card. If the answer is yes, the program will go back to Step 2. (Follow the arrows back to the first parallelogram, labelled Step 2.) If the answer is no, go to step 11. The variable T$ here tests whether or not there are any more greeting cards to send.

Step 11: FOR C = 1 to X

C is the variable name of the pigeonhole that keeps track of the number of times the last loop is executed. The starting value of C is 1. C will contain as many cards as are indicated by the value in X (the total number of cards as are indicated by the value in X). If Bob and his classmates send 30 cards, each card will have a different value from 1 to 30. Each card's value is assigned according to the order in which it is entered into the program.

STEP 12: DISPLAY CARD

This step will collect the parts of an individual greeting card—for example, the W$(1), M$(1), and S$(1)—and display the contents on the screen. (Each card will appear on the screen in the sequence in which it was input.)

STEP 13: NEXT C

This sends the program back to Step 11 where the computer adds 1 to C. We then proceed through this loop again with the computer displaying each completed greeting card in turn. When C is greater than X, the program stops.

Make It Better

Challenge your students to think of ways to improve or change this program. For example, suggest that they modify the program so that:

- the greeting cards are displayed in a scrambled order;
- all greeting cards addressed to one person are collected and displayed together;
- general messages are left for students in other classes.

WELL, POWDER MY WIG!
GREETINGS, GEORGE!

Tie It to Your Curriculum

You don't have to wait for a special holiday to have some fun with the Electronic Mailbox. Here are some ideas for how you can use the program all year long, while reinforcing some of your basic curriculum objectives at the same time.

- **History:** Have your students send greeting cards to famous people in history. Remind them to comment on each person's historical accomplishments in the greeting card.
- **Language Arts:** Organize a Poetry Greeting Card Day. Have students compose four-line poems to send to their classmates.
- **Social Studies:** Have teams of primary students compose greeting cards to leaders in the community. Each greeting card should identify how that leader contributes to the community.

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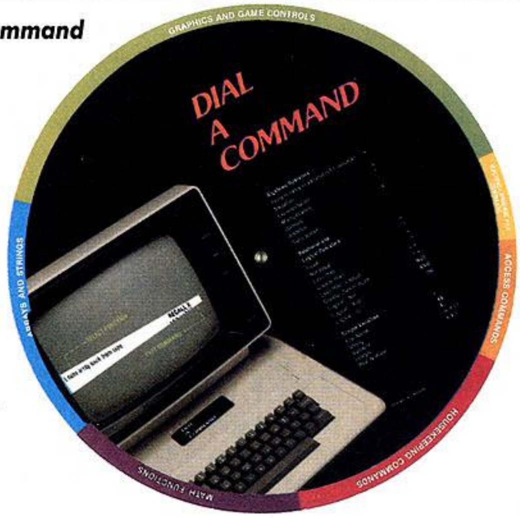
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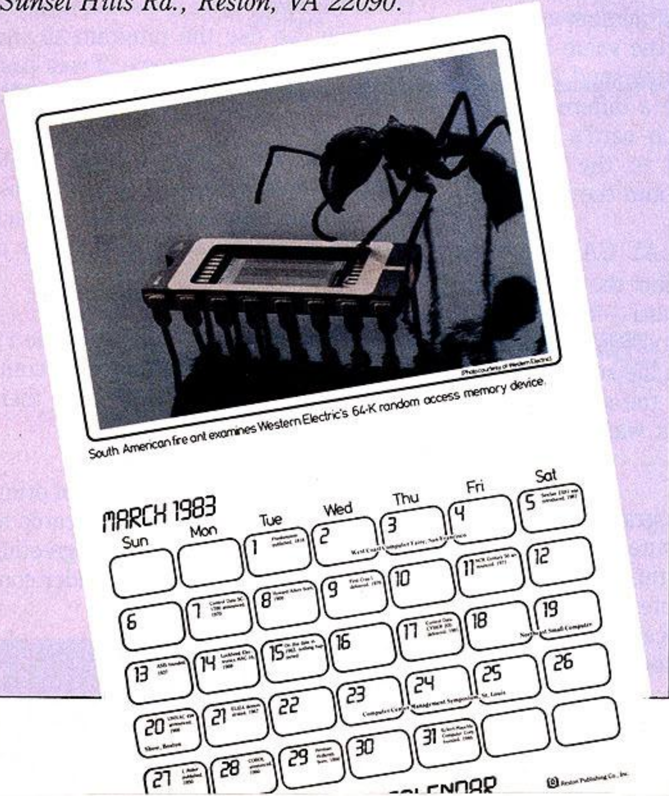
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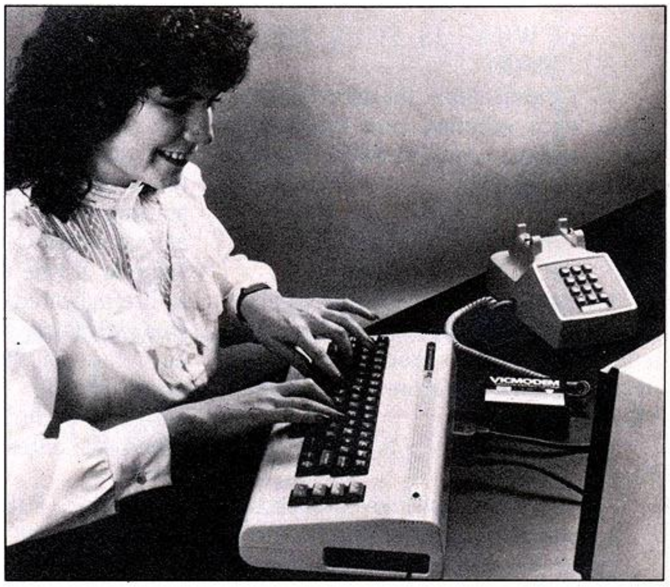

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Price: $70. For more information, contact Video Technology USA, 2633 Greenleaf Ave., Elk Grove Village, IL 60007; 312/640-1776.

A CASE FOR COMPUTERS

A new computer requires a new carrying case, so the Computer Case Company of Columbus, Ohio, lost no time in creating one for the new Commodore 64. It's available in two models, one if you've got a disk drive and the other for a cassette system.

Both cases have additional room for other equipment, papers, manuals, and software. Both can also be used with the Commodore VIC-20 and its related equipment.

Price: $119 for disk system, $109 for cassette. Available from dealers, or write for information to: Computer Case Co., 5650 Indian Mount Court, Columbus, Ohio, 43213; or call 614/868-9464.

DISK-O-TIER

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Price: $9.50 plus $2 postage. For information or to order, write to Electronic Time Service Center, Department 85, P.O. Box 651, Willoughby, OH 44094; or call 216/946-8479.

VICMODEM

If you're a VIC-20 or Commodore 64 user, the VICMODEM will allow you to hook up to data bases like The Source and CompuServe through regular telephone lines. Commodore, the producers of the VICMODEM, are also offering users a one-month subscription to CompuServe and access to the Commodore Network Information Service, which is an electronic bulletin board for sending and leaving messages.

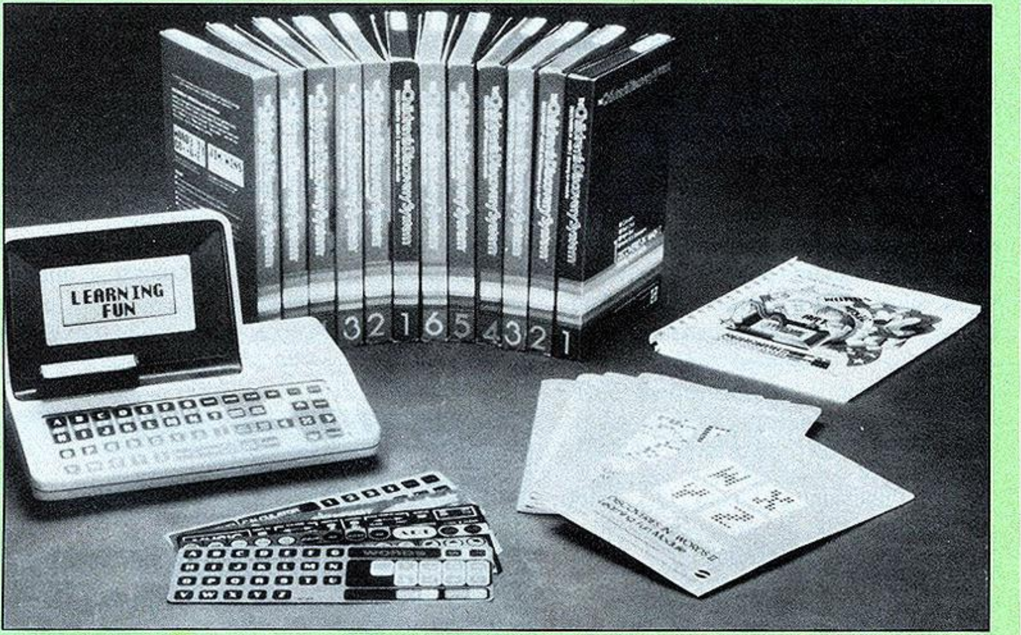
Price: $100. For more information, contact Commodore International, Computer Systems Group, 487 Devon Park Dr., Wayne, PA 19087; 215/687-9750.

DISK DRIVE CLEANER/ STORAGE FOLDER

To keep your disk drive running smoothly, you might want to consider the Discwasher Disk Drive Cleaner. It looks something like a blank diskette and consists of a fiber grid. You load it into your disk drive like a regular diskette and it removes all foreign debris from the inside of the drive.

To keep your floppy disks in working order, the same company has produced a disk storage folder that shields disks from harmful magnetic fields. The folder also makes a handy diskette mailing envelope for transporting your diskettes safely. It comes in three versions: for two 8" disks, two 5¼" disks and four 5¼" disks.

Price: $19.95 for disk drive cleaner; $7.95–$9.95 for storage folder. To order or for more information, contact Discwasher, 1407 N. Providence Rd., PO Box 6021, Columbia, MO 65205; 314/449-0941.



MATTEL LEARNING TOOLS

Preschoolers and elementary students can learn the alphabet, spelling and a number of other things from their Sesame Street friends through Mattel's set of learning toys. The tools come in volumes or modules of cassettes that run on Mattel's two pre-programmed learning aids, the Teach and Learn Computer System and The Children's Discovery System.

The six volumes for the Teach and Learn Computer System include The Sesame Street Alphabet; Numbers, Shapes and Words on Sesame Street; People in Your Neighborhood; Sesame Street Sounds and Places; The Sesame Street Parade; and Sesame Street Games. The volumes are for children ages 3-8.

For the Children's discovery System, Matell has produced five modules, including Discoveries in Fractions, Spelling Fun, U.S. Cities, and two adventure game cartridges. The modules are for children ages 6-11.

Price: $10 each for volumes; $20 each for modules. To order or for more information, contact Mattel Toys, 5150 Rosecrans Ave., Hawthorne, CA 90250; 800/421-2887.

SOFTWARE LIBRARY

Software Recommended for Teachers by Teachers

Editor's Note: *The following program descriptions and comments are excerpts from reviews that have appeared in Scholastic's Electronic Learning Magazine. In future issues of T&C, we'd like to print information about software that you have found useful for instruction or classroom management. Send the program title and publisher, along with your personal comments about the program to: Software Library, Teaching and Computers, 730 Broadway, New York, NY 10003. We'll pay $25 for each software recommendation we publish.*

GALAXY MATH FACTS GAME

Machine: [✓ Apple] Atari Pet TI [✓ TRS-80]
Level: K 1 [✓ 2 3 4 5 6] Pro
Random House, 201 E. 50th St., New York, NY 10022
Hardware: 32K (Apple, TRS-80 disk); 48K (Atari); 16K (TRS-80 cassette)
Cost: $147 (disk); $99 (cassette)

Description: By solving addition, subtraction, multiplication and division problems on one of six levels, students avoid black holes, sidestep stars and fight off alien attackers. In other "galaxies," space pilots must master place value, fractions, rounding, estimating, decimals and integers.

Teacher Comments: Students control how many problems they solve and, unlike similar games, Galaxy makes them concentrate more on getting answers than maneuvering the spacecraft. There is material for all ability levels and the games are genuinely enjoyable.

Recommended by: Fred Matt, Math Department Chairman and Thomas Wittkamp, Computer Lab Instructor, Lower Moreland School District, Huntington Valley, PA

HOMONYMS IN CONTEXT

Machine: [✓ Apple] Atari Pet TI [✓ TRS-80]
Level: K 1 2 [✓ 3 4 5 6] Pro
Random House, 201 E. 50th St., New York, NY 10022
Hardware: 16K cassette (TRS-80); 32K disk (Apple, TRS-80 Model III)
Cost: $39 (cassette); $60 (disk)

Description: Six lessons consist of 25 contextual sentences in which students choose the appropriate homonym. After each lesson, students review homonyms they missed and receive a performance report.

Teacher Comments: The choice of commonly used and misused homonyms is good, as are the contextual sentences in which they appear. The screen display is clean, consistent and easy to read.

Recommended by: Sandy Pratscher, Instructional Computing Consultant, and Sherry Rylander, Language Arts Curriculum Consultant, Education Service Center, Region XIII, Austin, TX

PAINT

Machine: Apple [✓ Atari] Pet TI TRS-80
Level: [✓ K 1 2 3 4 5 6] Pro
Reston Publishing Company, Inc., 11480 Sunset Hills Rd., Reston, VA 22090
Hardware: 48K; joystick
Cost: $39.95

Description: Using the joystick or keyboard, the artist moves a cross-shaped cursor to create a design. Color, texture, hue and brightness can be altered by dipping into paint pots on the bottom of the screen. Two modes—SuperPaint and SimplePaint accommodate a wide range of age groups. In the Art Show mode, painters retrieve finished paintings and display them in a slide show format.

Teacher Comments: The documentation includes many instructional ideas for art history, computer art, projects and more. The possibilities are endless.

Recomended by: Robert Ives, Granite School District, Salt Lake City, UT

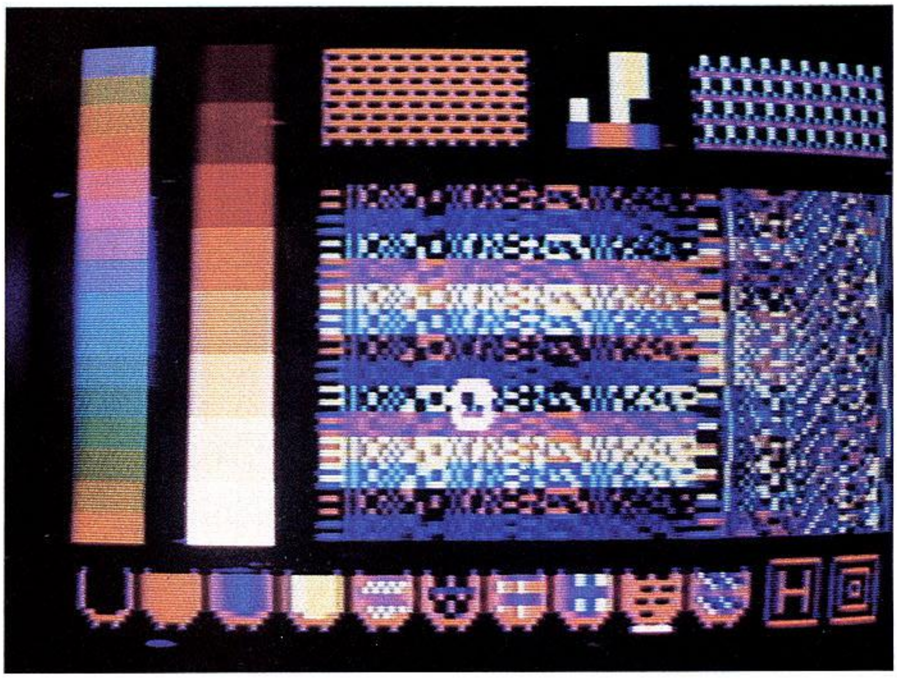
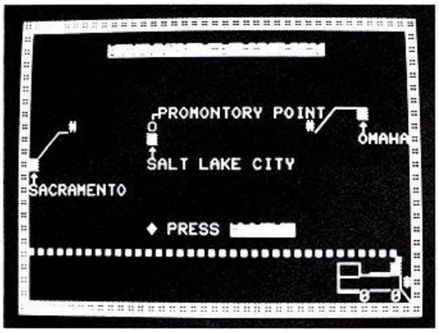


PHOTO COURTESY OF SOFTSIDE MAGAZINE, SOFTSIDE PUBLICATIONS, INC., 6 SOUTH ST., MILFORD, NH 03055; 603/673-0585.

TRANSCONTINENTAL RAILROAD

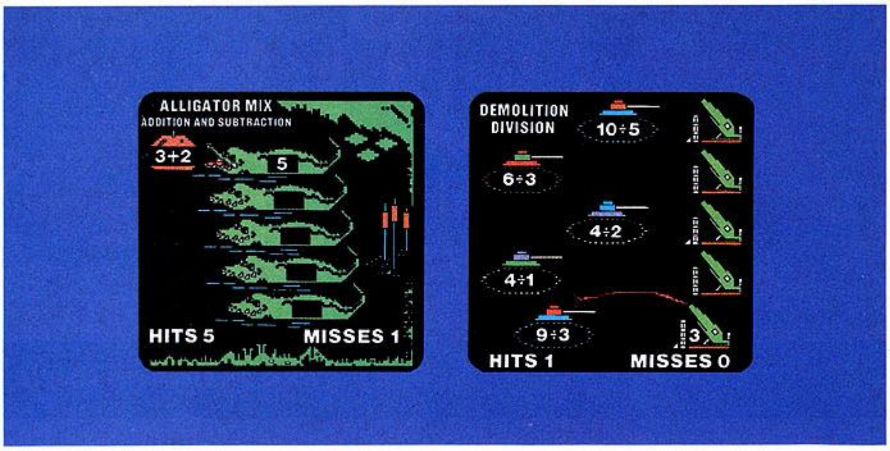
Machine: Apple Atari [✓ Pet] TI TRS-80
Level: K 1 2 3 4 [✓ 5 6] Pro
Micro-Ed, Inc., PO Box 24156,
Minneapolis, MN 55424
Hardware: 16K
Cost: $9.95
Description: Players try to rebuild the track joining the Central Pacific and Union Pacific Railroads by mastering historical information surrounding the event. Twenty correctly-answered questions is enough to join the tracks at Promontory Point.



Teacher Comments: Although the transcontinental railroad unit is usually not a major part of the curriculum, the program is helpful as a supplement to that period of American history.
Recommended by: Sharon Billiau, Teacher and Martha Rodger, Teacher, Dryden School, Dryden, MI

GEOGRAPHY SEARCH

Machine: [✓ Apple] Atari Pet TI [✓ TRS-80]
Level: K 1 2 3 4 [✓ 5 6] Pro
McGraw-Hill Co., School Divison, 1221 Ave. of the Americas, New York, NY 10020
Hardware: 48K
Cost: $180 (includes 25 workbooks, teacher's manual)
Description: As crew members on ancient sailing ships, students search for the New World. Up to six different groups of four or five students navigate the ship, record factual information and plan a strategy for surviving.
Teacher Comments: This is an exciting simulation that not only helps to teach a set of academic skills directly applicable to the social studies curriculum, but also helps to improve problem-solving and "group-process" skills. The workbooks provide useful background and hints for success.
Recommended by: Fred Bockman, Director, and Don Rausch, Computer Resource Coordinator, Project Micro-Ideas, Glenview, IL

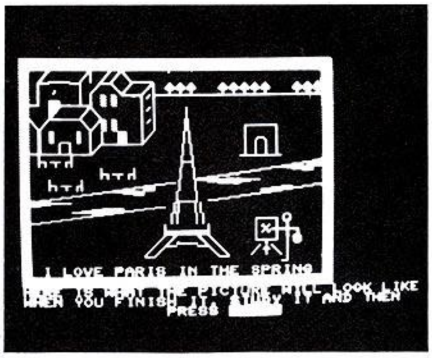


ARCADEMIC SKILL BUILDERS

Machine: [✓ Apple] Atari Pet [✓ TI] TRS-80
Level: K 1 [✓ 2 3 4 5 6] Pro
Developmental Learning Materials, One DLM Park, Allen, TX 75002
Hardware: 48K
Cost: $39 each; $220 complete kit
Description: Six drill and practice programs for four basic math operations. In game format, the object of each program is to destroy an invading problem by typing in the correct answer. Three skill levels. Games include Alien Addition, Minus Mission, Meteor Multiplication, Demolition Division, Alligator Mix (addition/subtraction), and Dragon Mix (multiplication/division).
Teacher Comments: The programs and packages have been created with care and include flash cards, worksheets and record keeping forms. The material is for grades 2-8, but not for students with impaired motor skills and vision.
Recommended by: Gary Marchionini, Math Resources Center, Wayne State University, Detroit, MI

TRS-80 PILOT PLUS

Machine: Apple Atari Pet TI [✓ TRS-80]
Level: K 1 2 3 4 5 6 [✓ Pro]
Radio Shack, 1800 Tandy Ctr., Fort Worth, TX 76102
Hardware: 32K (Model 1)
Cost: $49.95
Description: Pilot is an authoring program which allows users to program drill and practice exercises, quizzes, activities and tests using original material. The software also handles student records and creates graphics.
Teacher Comments: The manual is very easy to follow and even the most inexperienced teachers can learn to use the program. A sample PILOT lesson is particularly helpful.
Recommended by: Henry Altschuler, School District of Philadelphia, PA and Richard D'Orazio, Washington Township High School, Sewell, NJ


I LOVE PARIS IN THE SPRING
LOOK LIKE
WHEN YOU FINISH IT. STUDY IT AND THEN
PRESS

THE MINDSTRETCHER SERIES

Machine: [✓ Apple] Atari [✓ Pet] TI TRS-80
Level: K 1 2 [✓ 3 4 5 6] Pro
Island Software, Box 300, Lake Grove, NY 11755
Hardware: 8K (PET cassette); 48K (disk)
Cost: $20 (per cassette); $25 (per disk)
Description: Ten logic puzzles in game format which introduce concepts in logical thinking. Six are for classroom use (Jigsaw One and Two, Black, Candles, Kayles, and Welter).
Teacher Comments: "Black" was by far the most original and challenging game. Players try to move an object from the top of a grid to the bottom, while the opponent tries to direct it off. Four of the games are of questionable educational value, but the teacher's guide provides teaching suggestions. The graphics are excellent.
Recommended by: Bruce Eldredge, Computer Project Director, Prescott Unified School District and Kenneth Delp, Teacher, Granite Mountain School, Precott, AZ

Computer Bookshelf

By Elizabeth Ann Mills

Although many computer books are for older students, I have uncovered a few gems worthy of consideration for an elementary school library or classroom.

A good computer-career book is Gloria and Ester Goldreich's **What Can She Be? A Computer Scientist** (Lothrop, Lee and Shepard Company, 1979). In this book, the reader follows a computer scientist on her job as a systems analyst. While offering insights into the job, the book also describes many uses of computers in hospitals. The good photographs make up for the lack of technical detail, but the elimination of the male stereotype in the computer field doesn't compensate for the emphasis on a strong, math-only background for entrance into this field.

Of course, not all of your students will grow up to be computer specialists. For those students more interested in computers as tools for other trades—business, travel, education, etc.—I suggest you consider Melvin Berger's **Computers in Your Life** (Thomas Y. Crowell, 1981). Starting with the statement, "No matter what you do or where you do it, you can be sure that there is a computer in your life," Berger then creates several scenarios to demonstrate the importance, presence, usage, and worth of computers. Although this book is often listed at the secondary level, Berger's light and interesting tone make it very worthwhile for elementary students.

Elizabeth Mills is a librarian at Tucker Elementary School in Milton, MA.

For an entirely new approach to computer literacy, you might try **Hello, Mr. Chips! Computer Jokes and Riddles,** by Ann Bishop, (E.P. Dutton, 1982). This fun-filled book offers novices and experts alike knock knocks, Tom Swift jokes, and daffynitions on computers and computer terms—all of which provide a delightful way to feel at ease with computer terminology. In addition, the illustrations and print size all further add to the book's enjoyment.

Four introductory computer literacy books include Linda O'Brian's **Computers—A First Book** (Franklin Watts, 1978), Jean Rice's **My Friend the Computer** (T.S. Denison and Co., 1981), Gary Bitter's **Exploring with Computers** (Messner, 1981) and Sally Larsen's **Computers for Kids** (Creative Computing Press, 1981).

Of the four books, **Computers—A First Book** offers thorough coverage of history, development, capabilities, uses, and the future of computers. An excellent introductory book, **Computers** includes marginal notes for new terms, which are also defined in a glossary at the back of the book. **Exploring with Computers** covers the same areas of computer literacy, but at an intermediate level; it also provides computer-related activities.

Computers for Kids, although only in paperback, is available in three versions—Apple, TRS-80, and Atari—and is well worth acquiring. It's simply written and fun for any age, as illustrated by such flowchart examples as "How to Get a Date with Miss Piggy" and "How to Scare Your Mom with an Elephant." Programming instructions are explicit and easy to follow and the text includes sample programs, a glossary of statements and commands, exercises, and notes for teachers and parents.

My Friend the Computer is another activity book worth investigating. Each chapter ends with a "Before You Go On" section of questions and answers and a "Fun Things to Explore" section with good enrichment suggestions.

For an overview of various users of the computer at an intermediate to middle school level, I suggest Richard B. Rusch's **Man's Marvelous Computer: The Next Quarter Century** (Simon and Schuster, 1970). Don't let the copyright date fool you—the book contains excellent photographs and text on computer history, and provides a thorough look at school, bank, law enforcement, election, hospital, home, and weather applications of computers.

To round out your computer bookshelf are two reference books: Donald Spencer's **Computer Dictionary for Everyone** (Charles Scribner's Sons, 1979), which should be a part of the reference area of any school library, and Elizabeth Wall's **Computer Alphabet Book** (Nokomio, FL: Bayshore Books, 1979). Wall's book introduces the terms with such delightful line drawings and entertaining writing style that it makes one want to see the promised forthcoming titles of this Beginning Computer Literacy Series.

Your Turn

DEAR EDUCATOR:

Dozens of educators like yourself have contributed to the development of this Preview Issue of *Teaching and Computers*. And, now, we'd like to ask for your help, too.

We'd like to know what you liked and didn't like about this issue; what you found useful and not so useful. Your honest evaluation of this issue—as well as any suggestions you may have for future issues—will be of invaluable help to us as we plan for the 1983-84 school year.

Please take a moment to fill out the questionnaire below. Then, simply fold the form on the dotted lines and return it to us. No stamp is needed.

Thank you, in advance, for your help.

COMPUTERS AND YOU

1. What is your job title?
   ___Teacher ___Department Head
   ___Principal ___Other (*please specify*): ___________
2. If you checked Teacher or Department Head above, what grade and/or curriculum area are you primarily associated with? ___________
3. How would you describe your knowledge about computers?
   ___No knowledge ___Computer Aware/Literate
   ___Some knowledge ___Able to lead computer workshops for other educators
4. Do you currently have (or plan to have during the 1983-84 school year) a computer in your classroom? If so, what kind?
   ___Yes, I have a computer in the classroom.
   Brand Name: ___________
   ___No, I do not have a computer in the classroom.
5. Do you currently have access to computers in your school?
   ___Yes; Brand Name ___________
   ___No
6. If you are using a computer with your students, which item below best describes your current use? (*Check all that apply.*)
   ___I use the computer as a tool for instruction.
   ___I use the computer to teach students about the computer and about programming.
   ___I use the computer for classroom management applications.

ABOUT TEACHING AND COMPUTERS

1. In which of the following Departments in this issue (listed below) did you find information that was interesting or useful? (*Check as many as apply.*)
   ___Q&A (page 8)
   ___Update (page 10)
   ___Convention Calendar (page 12)
   ___New and Useful (page 42)
   ___Software Library (page 44)
   ___Computer Bookshelf (page 46)
2. If there are Departments that you feel did not provide you with interesting or useful information, please explain.

   ____

   ____

   ____

   ____
3. In which of the Columns in this issue did you find information that was interesting or useful to you?
   ___Teachers and Computers (page 6)
   ___From the Principal's Desk (page 14)
   ___Micro Ideas (page 16)
   ___Idea of the Month (page 22)
   ___Gurney's Computer Tips (page 24)
   ___Computing in March (page 32)
   ___Computing in the Content Areas (page 34)
   ___Logo Learning (page 36)
   ___Program of the Month: An Electronic Mailbox (page 38)
4. If there are columns you feel were not interesting or useful, please explain why.

   ____

   ____

   ____
5. On a scale of 1 to 5, please rank the three feature articles in this issue.

Title	Very Interesting or Helpful				Not Interesting or Helpful
Ten Things to Do the Day the Computer Arrives	1	2	3	4	5
Writing Skills and Word Processing	1	2	3	4	5
A Day in the Life of a Computer-Using Teacher	1	2	3	4	5

6. *Teaching and Computers* has three primary objectives (listed below). Please rank these objectives in order of importance to you (with 1 the highest in importance).
   ___To help teachers learn about computers and how they're being used in the classroom.
   ___To provide teachers with ideas for teaching about computers or computer programming.
   ___To provide teachers with ideas for using the computer as a tool for instruction in the traditional content areas.
7. Which of the following comments best describes your overall impression of this issue of *Teaching and Computers?*
   ___Very useful and informative
   ___Somewhat useful and informative
   ___Not a magazine I found very helpful

(Continued)

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8. Additional Comments:

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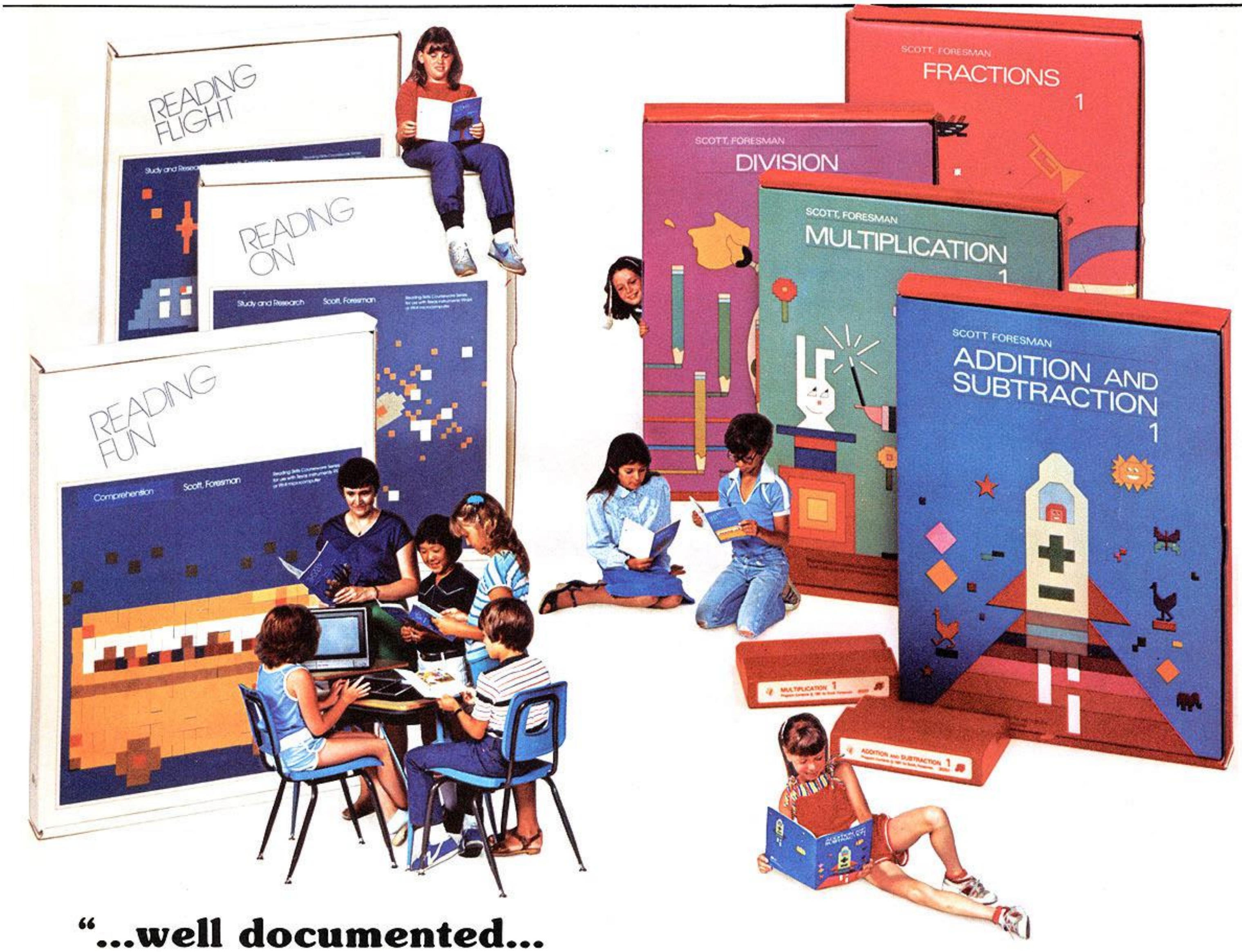
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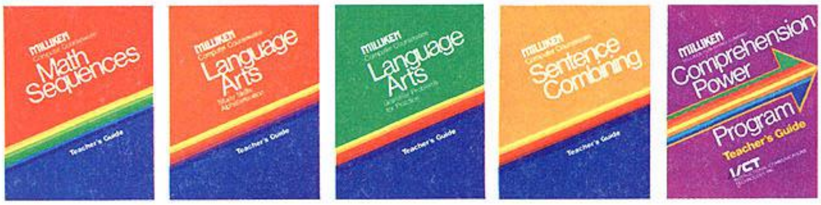

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March, 1983

Dear Educator:

Thank you for your interest in Scholastic's new TEACHING AND COMPUTERS Magazine. We are delighted to send you the enclosed copy of our Preview Issue.

As you look through your sample magazine, please keep in mind that we created TEACHING AND COMPUTERS for teachers.

Teachers who have never used a computer and who need assurances that the computer is nothing to be afraid of. They need clear, nontechnical information on what a computer is and how other teachers are using them.

Teachers who have had limited experience, perhaps just a teacher-training course, and who need ideas on how to integrate the computer into their daily teaching.

The experts need help, too: creative projects and activities that they can do with their students and useable software that leads to important learning objectives.

In fact, TEACHING AND COMPUTERS
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who needs practical, realistic help
coping with the computer era in education.

We plan to deliver into the hands of today's teachers the tools they need to teach with and to teach about the computer at every

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* Recommendations (no, I did not say "reviews") from other teachers of software that really does work -- full documented.

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Show the magazine to your colleagues who can tell you better than I whether our articles make them feel comfortable enough to do more with computers than they may have thought they'd ever be able to do.

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Right now is the time to act. We're ready to go to work at your side, helping you get more out of your school's investment in hardware...more out of teaching itself. Drop your TEACHING AND COMPUTERS Charter Subscription card in the mail today.

Sincerely,

Dan Gregory

Dan Gregory,
Associate Publisher

DG/tcb

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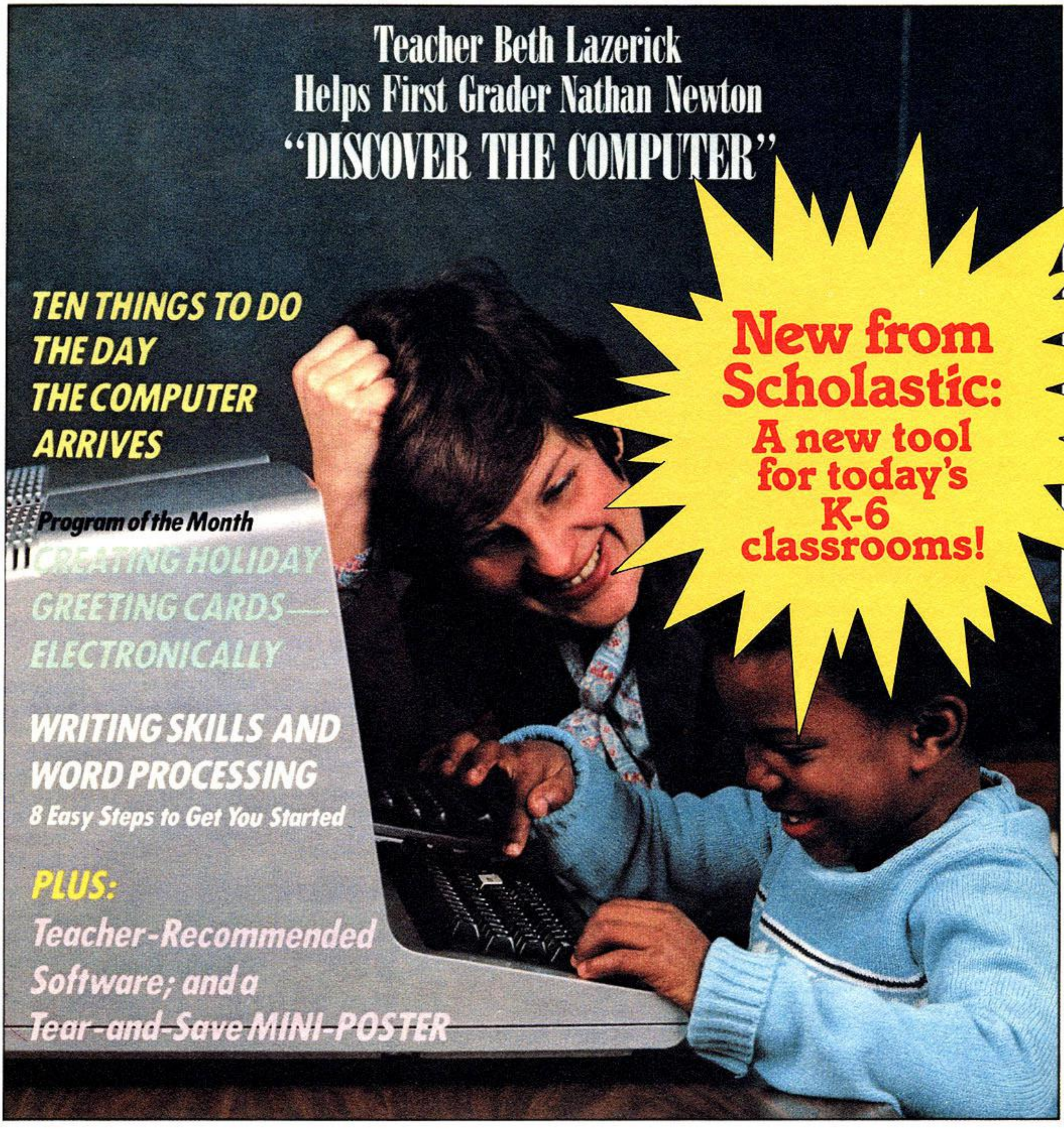
PREVIEW ISSUE

Scholastic's Magazine for Today's Elementary Classrooms

TEACHING and computers

Published by Scholastic Inc.
Spring 1983



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Creative computer activities that any teacher can follow, using the most useful computer languages for students (and for you!).

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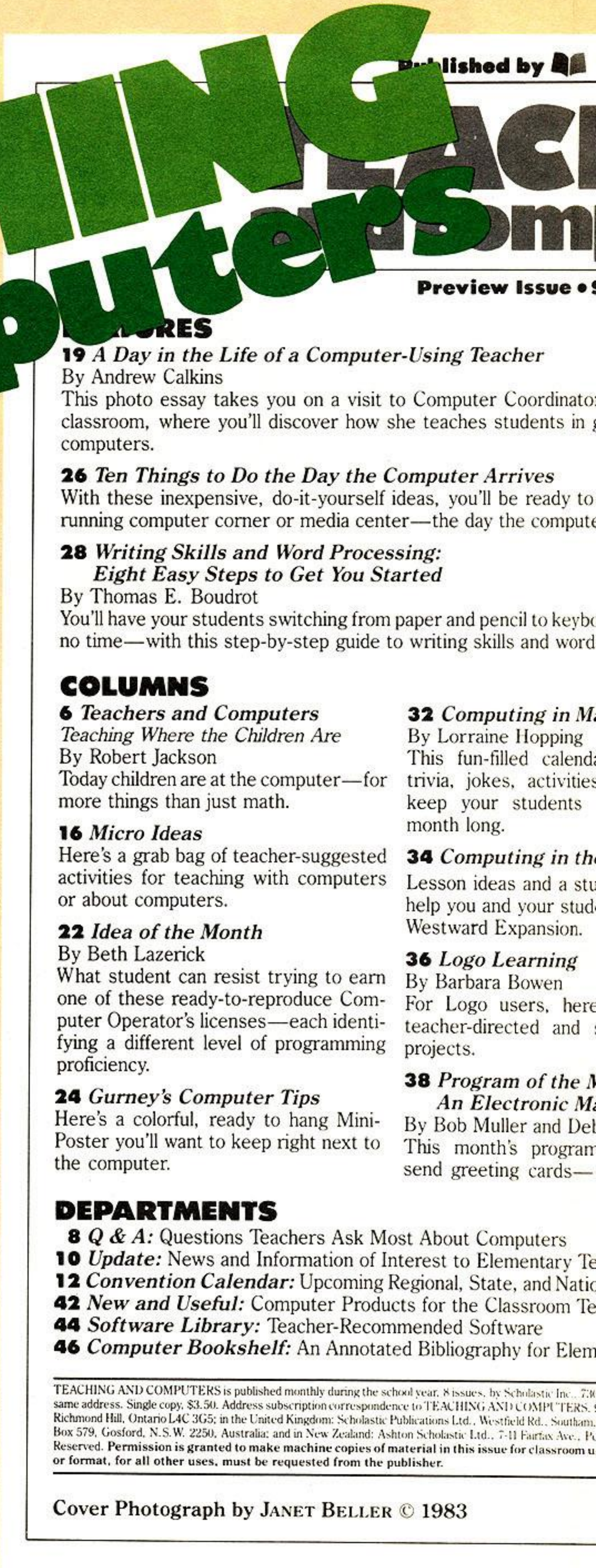

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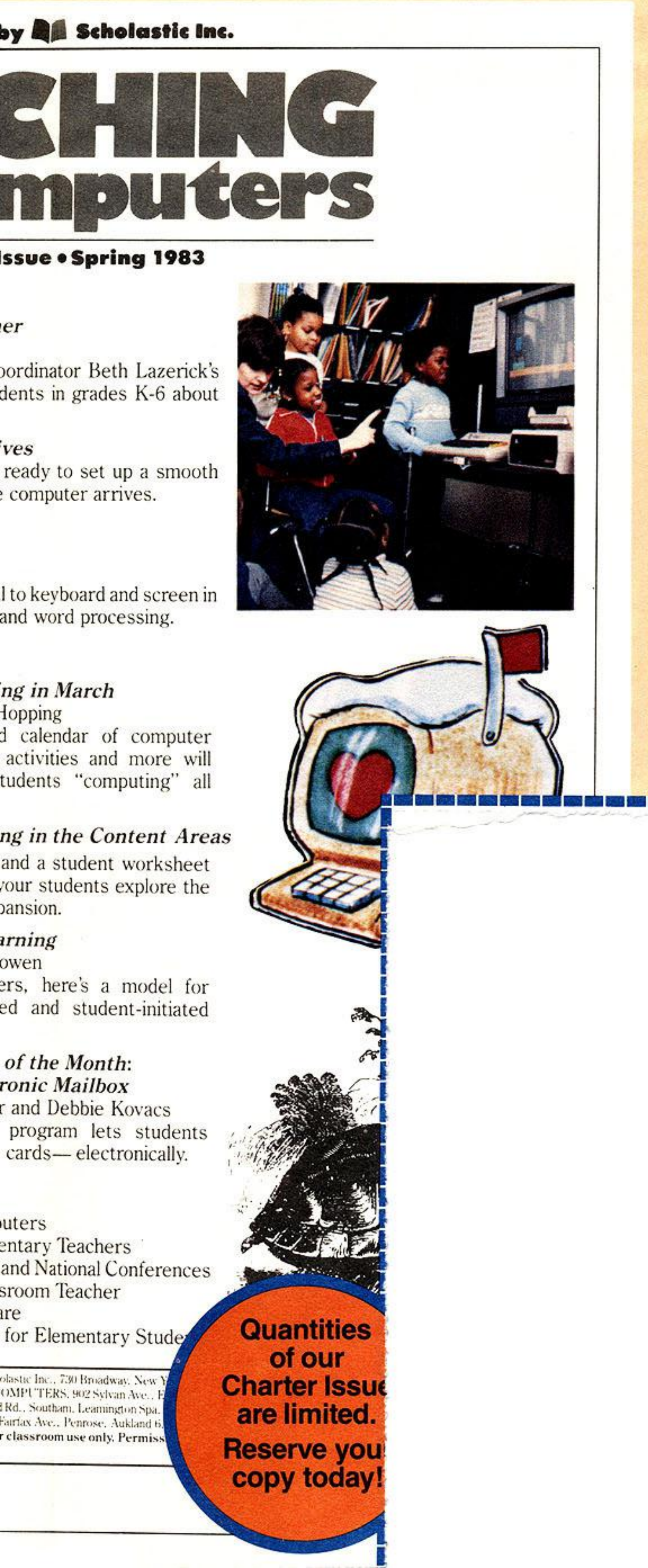

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ALL OF THE PLACES TEACHING AND COMPUTERS CAN LIVE IN YOUR SCHOOL,

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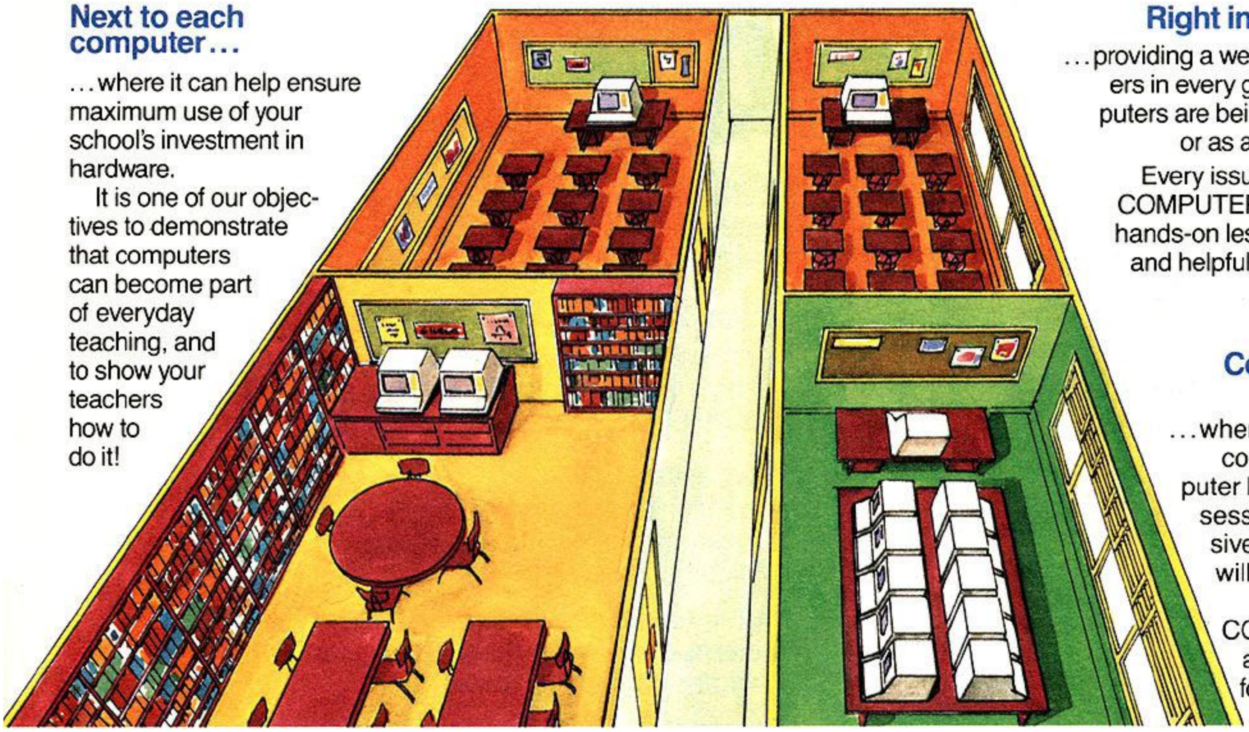

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Thank you!
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